

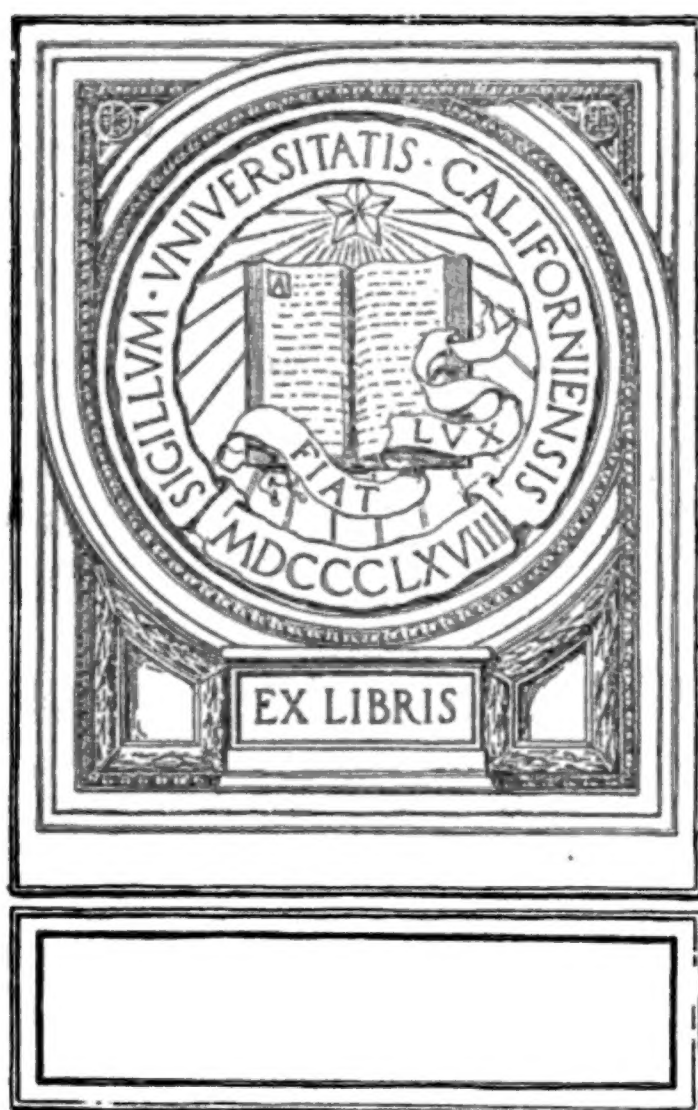
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Notes from the Leyden Museum

Rijksmuseum van Natuurlijke Historie te Leyden



NOTES
FROM THE
LEYDEN MUSEUM.

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LEYDEN MUSEUM

FOUNDED BY THE LATE

Prof. H. SCHLEGEL,

CONTINUED BY

Dr. F. A. JENTINK,
Director of the Museum.

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CONTENTS OF VOL. XIII.

† Archey Thomas Demery. By J. Büttikofer	Page 248.
-----------------------------------------------------------	--------------

MAMMALIA.

<i>Cercopithecus wolff</i> , n. sp. By A. B. Meyer	63.
Einiges über die Myoxidae oder Schläfer. Von Dr. C. L. Reuven. (Tafel 5).	65.
On the Malayan and Papuan Pigs in the Leyden Museum. By Dr. F. A. Jentink	85.
On <i>Dactylomys dactylinus</i> and <i>Kannabateomys amblyonyx</i> . By Dr. F. A. Jentink. (Plate 7).	105.
Some observations relating <i>Cynopterus brachyotis</i> Müller and <i>Kerivoula pellucida</i> Waterhouse. By Dr. F. A. Jentink	202.
Some additions to the Mammalian-fauna of Billiton. By Dr. F. A. Jentink	207.
On <i>Lepus netscheri</i> Schlegel, <i>Felis megalotis</i> Müller and <i>Anoa santeng</i> Dubois. By Dr. F. A. Jentink	217.
A new Mammal from Sumatra. By Dr. A. A. W. Hubrecht	241.

AVES.

The Birds of Billiton. By Dr. A. G. Vorderman	121.
On a collection of Birds from Flores, Samao and Timor. By J. Büttikofer	210.

REPTILIA.

List of Reptiles brought from Siam by Mr. R. C. Keun. By Dr. Th. W. van Lidth de Jende.	255
-------------------------------------------------------------------------------------------------	-----

PISCES.

On <i>Engraulis japonicus</i> Schlegel. By Dr. C. L. Reuven.	176.
Ueber eine neue <i>Polypterus</i> -Art aus Liberia. Von Dr. F. Steindachner	179.

INSECTA.

COLEOPTERA.

Description de nouvelles espèces de Curculionides. Par W. Roelofs (Planche 8, fig. 4).	115.
Description d'un Curculionide nouveau. Par W. Roelofs. (Planche 8, fig. 5).	145.
A new genus of Calandrinae. Characterized by C. Ritsema Cz.	147.
A new species of <i>Rhynchophorus</i> . Described by C. Ritsema Cz.	151.
Two synonymical remarks about Curculionidae. By C. Ritsema Cz.	154.

	Page
<i>Polycatesis igorota</i> , nova species Buprestidarum By K. M. Heller	159.
Contributions to the knowledge of the family Brentidae. By Dr. A. Senna. VI.	161.
Genre nouveau et espèces nouvelles du groupe des <i>Oxyopisthen</i> . Décrits par W. Roelofs ¹⁾	167.
On the Ceylon Cetoniidae collected by J. Z. Kannegieter. By J. R. H. Neervoort van de Poll and J. Z. Kannegieter	181.
Synonymical remarks on Cetoniidae. By J. R. H. Neervoort van de Poll	188.
A new species of the Longicorn genus <i>Neopharsalia</i> v. d. Poll. By J. Z. Kannegieter	189.
Quatre espèces nouvelles de Gyrinides du genre <i>Orectogyrus</i> . Décrites par M. Régimbart	191.
Synonymical remark about <i>Cetonia bifida</i> Oliv. By J. Z. Kannegieter	196.
Two new species of the genus <i>Helota</i> from Borneo. Described by C. Ritsema Cz.	197.
Synopsis and alphabetical list of the described species of the genus <i>Helota</i> McL. By C. Ritsema Cz.	223.
Two new species of the Lucanoid genus <i>Cyclommatus</i> Parry. Described by C. Ritsema Cz. (Plate 10, fig. 1).	233.
Description de neuf Elatérides nouveaux du Musée de Leyde. Par E. Candèze	243.
A new oriental species of the Coleopterous genus <i>Chelonarium</i> . Described by C. Ritsema Cz.	249.
Further contributions to the knowledge of the <i>Helota</i> -species of Burma. By C. Ritsema Cz.	251.

LEPIDOPTERA.

List of the Lepidopterous insects collected by Mr. A. G. Vorderman in the island of Billiton. By P. C. T. Snellen.	131.
<i>Lomotropa vellerialis</i> , nouvelle espèce de Pyralide. Décrite par P. C. T. Snellen. ¹⁾	239.

CRUSTACEA.

Carcinological studies in the Leyden Museum. By Dr. J. G. de Man. n°. 5. (Plate 1—4).	1.
-----------------------------------------------------------------------------------------------	----

MOLLUSCA.

Description of a new species of <i>Fusus</i> from Japan. By M. M. Schepman. (Plate 9, fig. 3).	62.
On a new species of <i>Lanistes</i> . By M. M. Schepman. (Plate 8, figs. 1 and 2).	111.
A new species of <i>Unio</i> . Described by M. M. Schepman. (Plate 8, fig. 3).	113.
On three Eastern Mollusks. By M. M. Schepman. (Plate 9).	155.
A new species of <i>Latirus</i> . Described by I. C. Melvill.	158.

VERMES.

Descriptions of Earthworms. By Dr. R. Horst. VI. (Plate 6).	77.
---------------------------------------------------------------------	-----

¹⁾ On p. 167, line 12 (from bottom), there is erroneously printed *O. scalaris* Roel. in stead of *O. suturalis* Roel. (see p. 170).

²⁾ Erratum: p. 239, line 4 (from bottom), for "marqués de taches" read "marqué de taches."

Vol. XIII was issued in parts in the following order:

- Nº. 1 — January 1891, Note I—III.**
- Nº. 2 — April 1891, Note IV—XIII.**
- Nº. 3 — August 1891, Note XIV—XXXIV.**
- Nº. 4 — October 1891, Note XXXV—XLI.**

NOTE I.

CARCINOLOGICAL STUDIES IN THE LEYDEN MUSEUM.

BY

Dr. J. G. de MAN.

N°. 5. ¹⁾

(Plate 1—4).

LIST OF SPECIES.

<i>Actaea rugata</i> Ad. & White.	<i>Gelasimus annulipes</i> Latr.
<i>Actaeodes pubescens</i> M. E.	» <i>Gaimardi</i> M. E.
<i>Etisus anaglyptus</i> M. E.	» <i>chlorophthalmus</i> Latr.
<i>Etisodes frontalis</i> Dana.	» <i>inversus</i> Hoffm.
<i>Epixanthus corrosus</i> A. M. E.	» <i>triangularis</i> A. M. E.
» <i>subcorrosus</i> , n. sp.	var. <i>variabilis</i> de Man.
<i>Cardisoma quadratum</i> de Sauss.	<i>Metopograpsus messor</i> Forskål,
<i>Gelasimus vocans</i> M. E.	var. <i>gracilipes</i> de Man.
» <i>tetragonon</i> Herbst.	<i>Grapsus maculatus</i> Catesby.
» <i>Dussumieri</i> M. E.	<i>Sesarma Büttikoferi</i> de Man.
» <i>arcuatus</i> de Haan.	» <i>Germani</i> A. M. E.
» <i>coarctatus</i> M. E.	» <i>oceanica</i> de Man.
» <i>forcipatus</i> Ad. & White?	<i>Heterograpsus crenulatus</i> Guérin.
» <i>Urvillei</i> M. E.	» <i>spinosus</i> M. E.
» <i>signatus</i> Hess.	<i>Calcinus intermedius</i> de Man.
» » » , var. <i>angustifrons</i> de Man.	<i>Pseudosquilla oculata</i> Brullé.

1. *Actaea rugata* Ad. & White.

Aegle rugata, Adams and White, Zool. of the voyage of H. M. S. Samarang, Crust., 1848, p. 43, Pl. VIII, fig. 5.

1) See for N°. 1 and 2: Vol. III, p. 121 and p. 245; for N°. 3: Vol. V, p. 150, and for N°. 4: Vol. XII, p. 49.

Actaea rugata, A. Milne Edwards, in: Nouv. Archives du Muséum, T. I, p. 269.

Actaea rufopunctata, de Man, in: Journal Linnean Society of London, Vol. XXII, 1887, p. 26, and in: Archiv für Naturgeschichte, Bd. 53, 1888, p. 261.

One female specimen without eggs, from Samoa, purchased from the Museum Godeffroy.

This species is closely allied to *Actaea rufopunctata* M. E., so that one easily may confound them. I now studied in Paris adult type-specimens of the two species, and I observed the following differences.

The cephalothorax of *A. rufopunctata* is a little more enlarged and the distance between the external orbital angles (and therefore also the breadth of the front) is comparatively somewhat smaller in this species than in *A. rugata*. The upper surface of the cephalothorax of *A. rufopunctata* is covered with a very short close down, similar to that of *Actaeodes tomentosus* M. E.; the interregional grooves, as well as the lobules themselves, are clothed with it, excepted the granules with which the lobules are covered. In *A. rugata*, however, the lobules of the upper surface of the cephalothorax and the legs are clothed, besides with a close down, with tolerably long stiff yellowish brown hairs, which are inserted between the granules.

As regards the form of the front, the two species agree with one another. In both species the regions 2 M are by longitudinal grooves divided into four protogastric lobules; in *A. rufopunctata* these lobules are nearly of the same size, but in *A. rugata* the external protogastric lobules are about twice as broad as the internal ones. The cardiac region of *A. rufopunctata* shows anteriorly a trace of a median longitudinal furrow, whereas in *A. rugata* this lobule appears always quite undivided.

The legs, finally, present a different appearance in both species. The carpopodites and propodites of *A. rufopunctata* are, namely, very nodose and these tubercles are especially characteristic to the ambulatory legs. In *A. rugata*

the legs are also grooved above, but they do not present the characteristic prominent tubercles of the other species.

The cephalothorax and the legs of *A. rugata* are also marked with some symmetrically arranged spots of a reddish or violet colour, the largest of which covers the whole mesogastric and the two internal protogastric lobules.

The specimens from the Mergui Archipelago and those from the Bay of Batavia, which I have referred (l. c.) to *A. rufopunctata*, now appear to be true representatives of *A. rugata*.

In a very young female specimen from the Fiji Islands, which Prof. Milne Edwards likewise refers to *A. rufopunctata*, the front projects a little less forward, the median emargination is not so deep, and on each side of it the front appears only slightly emarginate towards the external angles.

Actaea Rüppellii Krauss, from Natal, is probably identical with *A. rugata*, but the cephalothorax of the species of Krauss appears to be still somewhat narrower and less enlarged. Dr. Hilgendorf, however, unites the two species.

Actaea rugata Ad. & White has been recorded from Zanzibar, Mozambique, Mauritius, the Mergui Archipelago, the Bay of Batavia, Macassar, the Philippines and New Caledonia.

The dimensions of a type-specimen of *Actaea rufopunctata* M. E. from the Paris Museum, obtained in the Red Sea, are the following:

	♂	
Breadth of the cephalothorax	39	mm.
Length (the front included).	26 $\frac{1}{4}$	»
Distance between the external orbital angles		
(measured at the tips of the corneae) . .	17 $\frac{1}{2}$	»
Distance between the internal orbital angles .	11 $\frac{1}{2}$	»

The dimensions of three specimens of *Actaea rugata* Ad. & White are the following:

	1.	2.	3.	
	♂	♂	♀	
Breadth of the cephalothorax . .	32	26 $\frac{1}{3}$	25 $\frac{1}{2}$	mm.
Length » » » . .	23	19 $\frac{1}{4}$	18	»

Notes from the Leyden Museum, Vol. XIII.

	1.	2.	3.
Distance between the external orbital angles	♂ 16 $\frac{1}{2}$	♂ 13 $\frac{1}{4}$	♀ 13 $\frac{1}{4}$ mm.
Distance between the internal orbital angles	10	8	„

N^o. 1. Specimen collected in New Caledonia, from the Paris Museum.

N^o. 2. Specimen from the Bay of Batavia.

N^o. 3. Specimen from Samoa.

2. *Actaeodes pubescens* M. E.

(Pl. 1, fig. 1).

Zozymus pubescens, H. Milne Edwards, Hist. Nat. des Crustacés, T. I, p. 384. (1834).

Liomera pubescens, A. Milne Edwards, in: Nouv. Archives du Muséum, T. I, p. 223, Pl. XII, fig. 6, 6^a.

A male and a female from the Fiji Islands.

The nearest ally of this rare species is *Actaeodes Richtersii* de Man, from Tahiti. As regards the general form and structure of the cephalothorax, these two species closely resemble one another. The regions of the upper surface, which is somewhat convex in the anteroposterior direction and slightly also transversely, are as little defined as those of *Act. Richtersii*, at least in these two specimens, one of which has been kindly determined for me by Milne Edwards. The sutures defining the gastric region are absent, so that the quoted figure in the »Nouvelles Archives'', in which they have been figured, is perhaps not exact. I observe only the median frontal furrow, which is divided itself as usual in two furrows, but these two furrows are short and do not reach to the lateral borders of the gastric region. The grooves defining the gastric and cardiac regions are indeed quite absent in these specimens, and only two small impressed points, placed in a transverse line near one another,

Notes from the Leyden Museum, Vol. XIII.

separate the two regions from one another. In the male specimen a shallow transverse impression separates still the cardiac from the intestinal region, but in the larger female even this impression is almost indistinguishable. The two furrows which border the third lobe of the antero-lateral margins, are as short as in *A. Richtersii*, and the furrow which extends along the upper margin of the orbits and the two anterior antero-lateral lobes, quite resembles that which exists in *A. Richtersii*.

The somewhat prominent front is about as narrow as in the other species, and divided by a narrow incision in two rounded lobes; these lobes are directed obliquely backward and are more distinctly emarginate towards their external angles, which are dentiform and scarcely separated from the internal angles of the orbits. The eye-peduncles and the orbits resemble those of the other species.

The antero-lateral margins are a little longer than the postero-lateral ones, but they are equal in length in the other species. They are rather indistinctly divided into four lobes, the first of which is only a little longer than the second: the first antero-lateral lobe of *A. Richtersii*, however, is nearly as long as the three other lobes taken together. The third lobe is separated by more distinct notches from the second and the fourth, than the first lobe from the second. The third lobe measures two thirds of the length of the second, and is slightly rounded and prominent. It ought to be observed that in the younger male specimen the antero-lateral margins appear to me to be comparatively a little longer than those of the adult female, and that the third lobe of the former projects a little more outward laterally than the fourth, whereas in the female the fourth lobe projects more outward than the third. As regards the granulation of the cephalothorax, both species almost agree with one another, and the upper surface is covered with very short hairs which are also inserted at the base of the granules.

The under surface of the cephalothorax is everywhere

granulated, the granules being larger towards the lateral margins. The external maxillipedes are uniformly granulated and this is also the case with the sternum. The male abdomen is five-jointed and nearly smooth, except the two basal joints; the penultimate joint is nearly quadrate and scarcely shorter than the breadth of its posterior margin.

The seven-jointed abdomen of the female is also somewhat granulated on the two first joints and on the lateral sides of the two following.

The anterior legs are especially characteristic. They are equal, both in the male and in the female. The arms are everywhere granulated, and the granules are a little larger on the upper and on the infero-external margins. The wrist is everywhere granulated, and armed with a single tooth at the internal angle. The hands are almost three times as long as high, like in *A. Richtersii*, but the fingers are comparatively shorter. They measure, indeed, little more than a third of the length of the palm, and the palm is twice as long as high. The upper margin and almost the whole outer and inner surfaces of the palm are covered with conical granules, which are arranged, at least in the middle of the outer surface, more or less distinctly in longitudinal series. The granules disappear gradually towards the distal end of the outer surface and of the lower margin, somewhat more in the younger male than in the female specimen. A few granules are seen along the distal margin of the outer surface. The granulation evidently extends on a somewhat greater part of the outer surface of the palm than in *A. Richtersii*, and in this species the granules show nowhere a disposition to an arrangement in longitudinal series. The short fingers are feebly dentate, but distinctly excavated at their ends; the upper margin of the dactylus presents two deep longitudinal furrows, and the outer and inner sides of the fingers are also furrowed. The hands have the same form and proportions in the male and in the female, though it ought to be obser-

Notes from the Leyden Museum. Vol. XIII.

ved that the male is much younger than the female.

The ambulatory legs are similar to those of *A. Richtersii*, but they are more distinctly and more uniformly granulated, and clothed only with short and scanty hairs, whereas the ambulatory legs of *A. Richtersii* are provided with long, yellowish and silky hairs.

The upper surface of the cephalothorax and the upper sides of the legs present a fine rose-colour, the under surface is paler. Quite as in the species from Tahiti, the upper surface of the cephalothorax is ornamented with small round white spots, some of which occur also on the under sides of the carapace. The fingers are of a dark lead-colour with paler tips, and this lead-colour extends in the male on the distal part of the outer and inner surfaces of the palm, but not in the female.

Actaeodes pubescens appears to be widely distributed, the original specimen of the Paris Museum having been collected at Mauritius.

Measurements:	♂	♀
Greatest width of the cephalothorax	23 ² / ₃ mm.	29 ¹ / ₂ mm.
Length	12 ² / ₃ »	16 »
Distance between the external orbital angles	9 »	11 ¹ / ₃ »
Length of the hands	12 »	14 ² / ₅ »
Height » »	4 ¹ / ₄ »	5 »
Length » » fingers	3 ² / ₅ »	4 ¹ / ₂ »

3. *Etisus anaglyptus* M. E.

Etisus anaglyptus, H. Milne Edwards, Hist. Nat. des Crust. T. I, p. 411. (1834).

Etisus anaglyptus, Miers, Report on the Zool. Coll. made in the Indian Ocean during the voyage of H. M. S. Alert, 1884, p. 218.

The Leyden Museum contains two males from Ti or, and a male and a female from Samoa.

Notes from the Leyden Museum, Vol. XIII.

Prof. Milne Edwards enabled me to compare these specimens with the original individual, which has been figured by the late Milne Edwards in the large illustrated edition of Cuvier. As Miers already supposed, the frontal lobes are not merely truncated, but slightly emarginated, and they are separated by a triangular notch, which is more distinct than in the figure of Cuvier. The upper surface of the cephalothorax of the male from Samoa is marked with five yellowish red spots, viz. one on the gastric, one on each hepatic region, and one on the anterior part of the areolae 5 L. The upper surface of the cephalothorax of the female specimen appears slightly more rugose, and the tubercles, with which the anterior legs are provided, are a little more distinct and prominent than in the male. The black colour of the fingers does not extend over the palm, but in the male it extends over a distal part of the inner and outer surface of it.

The cephalothorax of the larger male from Timor presents the following dimensions:

	♂
Greatest width (distance between the penultimate antero-lateral teeth).	43½ mm.
Length of the cephalothorax ¹⁾	29 »
Distance between the tips of the internal orbital angles	11½ »

This species has also been recorded from the Philippines and from the North-eastern coasts of Australia.

4. *Etisodes frontalis* Dana.

(Pl. 1, fig. 2).

Etisodes frontalis, Dana, Proc. Acad. Nat. Sciences of Philadelphia, 1852, p. 77, and United States Expl. Exp. Crust. 1852, T. I, p. 187, Pl. IX, fig. 3.

1) The length of the cephalothorax is measured exactly in the dorsal median line, from the base of the median frontal incision to the posterior margin.

Notes from the Leyden Museum, Vol. XIII.

Etisodes frontalis, A. Milne Edwards, in: Nouv. Archives du Muséum, T. IX, p. 235.

Two fine male specimens from Upolu, one of which is adult. The latter was sent by me to Prof. Milne Edwards, who informed me that this species was referred in the Collection of the Museum to *Etisodes frontalis* Dana, and that the specimens of the Museum were also collected at Upolu. I believe he is right, though I must observe that the cephalothorax of Dana's specimen appears comparatively less enlarged and narrower than those of our individuals; but the original specimen, described by Dana, was very young, the cephalothorax measuring only eight millim. in breadth, and the difference may, therefore, perhaps be ascribed to this fact.

This species is certainly different from *Etisodes Electra* Herbst = *sculptilis* Heller, and Miers (Report Crustacea Voyage of H. M. S. Alert, p. 217) was wrong in uniting these two species.

The cephalothorax is exactly once and a half as broad as long. The upper surface is slightly convex anteriorly, and more depressed posteriorly; it is rather strongly lobulate, and the interregional grooves are rather deep, though narrow. The median frontal furrow is, as usual, divided in two furrows which border the mesogastric area 3 M, issuing into the gastrobranchial i. e. cervical suture. The epigastric lobes are prominent, and distinctly separated from the less prominent postfrontal lobules 2 F; they are also separated from the upper walls of the orbits by longitudinal grooves, which run parallel with the median frontal furrow, and which begin at the hiatus between the internal orbital and external frontal angles. The protogastric regions 2 M are subdivided only anteriorly by the described longitudinal grooves which border the epigastric lobules laterally, and are for the rest undivided. The urogastric lobe 4 M is distinctly defined. This is not the case with the cardiac region, which is coalescent laterally with the postero-lateral

Notes from the Leyden Museum, Vol. XIII.

regions 3 R; but it is separated from the intestinal region by a transverse groove, which runs parallel with the posterior margin of the cephalothorax and which is interrupted in the middle. The hepatic region is divided into three prominent lobules 1 L, 2 L and 3 L, and the three areolae 4 L, 5 L, 6 L are also distinctly separated from one another and, at least the first, prominent. The postero-lateral regions 1 R, 2 R and 3 R are equally distinct, and the two latter are separated from one another by a rather deep oblique groove. The lobulation of the cephalothorax evidently much resembles that of *Etisodes Electra*. The lobules are irregularly punctate, and the anterior ones appear slightly granulated on their most prominent portions, only visible, however, under a lens of sufficient power. The distance between the external orbital angles is slightly more than half as broad as the greatest width of the cephalothorax. The front does not project so much forward as in *Etis. Electra* and is, somewhat obliquely, directed downwards. It presents two arcuate and granulated internal lobes, which are separated from one another by a small triangular incision; these lobes are separated by a slight emargination from the less prominent external lobes, which are much smaller, obtuse and dentiform. The frontal lobes are ornamented on their upper surface with a transverse row of obtuse granules, which runs close to the anterior margin of the front, and which is interrupted in the middle by the median frontal furrow. The external frontal lobes are separated from the obtuse internal orbital angles by a rather wide triangular hiatus, in which the external antennae are placed. The orbits are scarcely broader than long. The upper margin presents externally two triangular incisions, the external angle is obtusely dentiform, and separated from the lower margin by a triangular hiatus; the latter is finely granulated like the upper margin and terminates at its internal angle into a prominent dentiform lobe.

The antero-lateral margins are a little longer than the

Notes from the Leyden Museum, Vol. XIII.

postero-lateral ones and armed, behind the extraorbital teeth, with four triangular teeth. The two first are subacute, the two posterior ones very acute, almost spiniform, and somewhat directed forward. The penultimate tooth projects a little more outward than the last, so that the cephalothorax presents its greatest width at the penultimate teeth. The margins of these teeth are ornamented, especially at their base, with acute conical granules, and the antero-lateral teeth are also somewhat granulated above. The postero-lateral margins are nearly straight and somewhat granulated. There is, finally, a transverse sinuated groove immediately before the posterior margin of the cephalothorax.

The lateral parts of the under surface of the cephalothorax are covered with long hairs, especially in the middle and posteriorly; they are also somewhat granulated.

The second joint of the outer foot-jaws is marked with the usual longitudinal furrow near and parallel with the inner margin; this furrow reaches neither to the anterior, nor to the posterior margin of the joint. The third joint is slightly broader than long and quadrangular; its anterior margin is straight, the external margin very slightly concave. The outer foot-jaws are almost smooth, though punctate.

The sternum is smooth, shining and somewhat punctate, especially anteriorly. The male abdomen is five-jointed. The penultimate joint is somewhat longer than broad, the terminal joint obtusely rounded and a little shorter than broad at its base; the abdomen is smooth, except the lateral sides of the basal segment which are granulated.

The legs resemble those of *Etisodes Electra*. The right chelipede is the larger in both specimens. The arms project scarcely beyond the lateral margins of the cephalothorax. Some small acute teeth are observed on the upper margin, which is clothed with long hairs; the anterior margin presents a few acute granules, but the infero-external margin is rounded and unarmed. The distal margin of the outer surface is also somewhat bairy. The arms are for

the rest almost smooth. The wrist is armed with an acute tooth at the inner angle, below which a second, somewhat smaller one, occurs. The upper surface bears a tubercular eminence near the articulation with the hand, and appears somewhat rugose, uneven and punctate. The larger hand is twice as long as high, the fingers included; the smaller one appears to be comparatively a little longer. The upper margin of the palm presents three tubercular eminences at the proximal end; the outer surface is covered with numerous slightly transverse or oblique and reticulating rows of confluent and little distinct granules, some of which are finer and smaller than the others. These granules are, however, scarcely distinguishable to the naked eye. The under margin of the palm is smooth and rounded. These transverse and oblique granular ridges are a little more prominent on the smaller than on the larger hand. The fingers measure scarcely two thirds of the length of the palm. They are widely gaping. The mobile finger is strongly arcuate and presents two longitudinal furrows on its upper margin, of which the inner one is very short; three tubercular eminences exist at the base of the upper margin, and are placed transversely. The inner margin of this finger is armed with a strong, obtuse tooth at the base, with a much smaller tooth immediately before it. The lower finger, which is also longitudinally sulcate on its outer surface, is slightly curved upward at its tip, and armed in the middle with a strong tooth, which is preceded both on the outer and inner side by three or four smaller teeth. The strongly excavated extremities of both fingers are ornamented with a tuft of yellow hairs. The teeth with which the fingers of the smaller hand are armed, are much smaller, especially those of the dactylus. The inner surface of the hands and of the fingers is quite smooth.

The ambulatory legs are short. They are armed along their upper margins with small acute conical granules, which become somewhat larger and spiniform on the dactylopodites; some smaller granules are moreover observed

on the lower or posterior margins of the propodites and at the base of those of the meropodites. The outer surface of these legs is for the rest nearly smooth. They are covered along their margins with tolerably long yellow hairs.

Measurements:	♂	♂
Greatest width of the cephalothorax	$21\frac{3}{4}$ mm.	14 mm.
Length > > >	$14\frac{2}{3}$ >	$9\frac{3}{4}$ >
Distance between the external orbital		
angles	$12\frac{1}{4}$ >	$8\frac{2}{5}$ >

The cephalothorax presents, on a pale yellowish gray ground-colour, a few purplish spots, one on the middle of the gastric and one on the cardiac region; that part of the upper orbital margin which lies between the two incisions, is also marked with purple. The hands and the other legs are also marbled with this colour. The fingers are pale brown, with white tips and white teeth, and the brown colour does not extend on the palm.

The hands of this species somewhat resemble those of *Actaea Danae* A. M. E. = *Actaeodes areolatus* Dana (Dana, l. c., Pl. IX, fig. 8b).

Etisodes frontalis was discovered in the Sooloo Sea.

5. *Epixanthus corrosus* A. M. E.

Confer: de Man, in: Archiv f. Naturgeschichte, Jahrg. 53, 1888, p. 292, Pl. XI, fig. 3, and in: Zool. Jahrbücher von J. W. Spengel, T. IV, 1889, p. 422.

The Leyden Museum contains a single male from Padang.

The figure of this crab in the »Nouv. Archives du Muséum, T. IX. pl. 9, fig. 1" is not quite exact, as I found by an examination of the small type-specimen of this species in the Paris Museum. The cephalothorax indeed has been drawn a little too long. The front, which in larger individuals is comparatively narrower than in the young ones, has been well figured.

The cephalothorax of the Padang specimen is compara-

Notes from the Leyden Museum, Vol. XIII.

tively a little less enlarged than that of the adult individual from Batavia, which I described some time ago.

Measurements:	Type specimen of Paris.	Padang specimen.
Breadth of the cephalothorax. .	13 mm.	27 mm.
Length » » » . .	$7\frac{2}{3}$ »	$15\frac{3}{4}$ »
Distance between the external orbital angles	$5\frac{1}{2}$ »	$9\frac{1}{2}$ »

6. *Epixanthus subcorrosus*, n. sp.

(Pl. 1, fig. 3).

The Leyden Museum has purchased from the Museum Godeffroy two specimens of a new *Epixanthus*, a male and an ova-bearing female, collected on the Island of Upolu.

This new species at first sight strongly resembles *Epix. frontalis* M. E., and is apparently more closely allied to this species than to *Epix. corrosus* A. M. E. = *rugosus* Kossm. I have before me specimens of *Epix. frontalis* (Pl. 2, fig. 4) from the Mergui Archipelago and from the Bay of Batavia, and furthermore the two specimens of *Epix. corrosus* mentioned above.

As to the general form of the cephalothorax, this new species strongly resembles *Epix. frontalis*; thus the proportion of the breadth and the length is precisely the same, and the upper surface is as much depressed. As in *Epix. frontalis*, the upper surface is neither lobulated nor grooved, except on the postfrontal or epigastric region, where there is the usual longitudinal median suture which is posteriorly bifurcated.

The epigastric lobes are faintly indicated. The upper surface of the cephalothorax of *Epix. frontalis* appears, when seen under a lens, somewhat minutely granulated anteriorly and towards the antero-lateral margins; in our new species, however, the upper surface is distinctly rugose and uneven on the antero-lateral parts in front of the minutely granulated line, which in both species

proceeds from the last antero-lateral tooth obliquely forward and inward. The upper surface of the front appears likewise slightly rugose and granular. Now I must remark that these rugosities are considerably less developed in *Epix. subcorrosus* than in *Epix. corrosus*. These rugosities are also observed on the postero-lateral sides, immediately behind the oblique granulated line. The rest of the upper surface of the cephalothorax is quite smooth as in *Epix. frontalis*, and appears only minutely punctate when seen under a magnifying glass; the points are, however, a little more distinct and more crowded than in *Epix. frontalis*.

In *Epix. corrosus*, on the contrary, the whole upper surface appears distinctly granulated.

As regards the form of the front and the size and the shape of the orbits, our species almost entirely agrees with *Epix. frontalis*, but the distance between the external orbital angles (and consequently also the front) is a little broader in proportion to the breadth of the cephalothorax in *Epix. frontalis* than in *Epix. subcorrosus*, as is shown by the measurements given below. Thus the upper margin of the orbits is entire and the lower one does not present a hiatus near the external angle, which is not at all prominent. The antero-lateral margins are comparatively as long as those of *frontalis* and are, quite as in this species, divided into four lobes; these lobes are similar to those of *Epix. frontalis* and are separated by notches of quite the same form, but the third lobe is comparatively a little longer. In *Epix. frontalis* the second anterolateral lobe is one and a third, in *Epix. subcorrosus* scarcely one and a seventh as long as the third lobe. At first sight, therefore, the second lobe appears distinctly longer than the third in *Epix. frontalis*, but scarcely so in *Epix. subcorrosus*.

The lower surface of the cephalothorax at the subhepatic region is only minutely granular in *Epix. frontalis*, but moreover slightly rugose in the other species. The basal joint of the outer antennae of *Epix. frontalis* is, for a

Notes from the Leyden Museum, Vol. XIII.

somewhat longer extent, in contact with the infero-lateral process of the front, and comparatively a little broader than in *Epix. subcorrosus*.

As to the external maxillipedes, I will observe that the merus-joint is a little more transverse, and the exognath also slightly broader in our new species than in *Epix. frontalis*. The abdomen is seven-jointed and strongly resembles that of the other species, but the penultimate segment is slightly more transverse in *Epix. subcorrosus*, in both sexes, and the abdomen of the female is generally more enlarged.

The anterior legs are comparatively a little shorter and a little less slender, but for the rest strongly resemble those of *Epix. frontalis* as to their form; they differ, however, essentially by the upper surface of the wrist and the upper margin of the palm being distinctly rugose and uneven, whereas they are smooth or nearly smooth in *Epix. frontalis*.

The outer surface of the palm, which is strongly rugose and granulated in *Epix. corrosus*, is perfectly smooth both in *Epix. frontalis* and in *Epix. subcorrosus*, at least in the larger hand, the outer surface of the palm of the smaller hand being somewhat minutely granular, when seen under a lens, in both species. As to the form and the dentition of the fingers, *Epix. frontalis* agrees with *Epix. subcorrosus*, but the distal half only is black coloured, whereas this colour extends slightly farther in *Epix. frontalis*.

The ambulatory legs resemble those of *Epix. frontalis*, but they are comparatively a little shorter and present therefore a slightly less slender form.

Epix. subcorrosus is closely allied to *Ozius Agassizii* A. M. E. from Panama and to *Ozius reticulatus* Isis Desborne and Schramm, which inhabits the West-Indian Seas. Our species differs from the former by the more regularly oval form of the cephalothorax and by the hands being subcorrose on the upper margin, but not covered with small tubercles, whereas it may be distinguished from *Ozius*

reticulatus by the different form of the hands, which are less high in proportion to their length.

Ozius rugulosus Stimps. differs by a less enlarged, more convex cephalothorax, by the shorter fingers of the anterior legs, etc.

When we exclude *Epix. dentatus* White, which is easily recognized by the prominent antero-lateral teeth separated from one another by deep incisions, the three other Indo-Pacific species of *Epixanthus* may be distinguished as follows:

Posterior half of the upper surface of the cephalothorax and outer surface of the anterior legs	{	distinctly granulated.	<i>corrosus.</i>
		smooth; antero-lateral regions, upper surface of the wrist and upper margin of the hands	distinctly rugose.
			smooth or only minutely granular.
			<i>subcorrosus.</i> <i>frontalis.</i>

The dimensions of the two specimens of *Epix. subcorrosus* are the following:

	♂	♀
Breadth of the cephalothorax . . .	21 1/3 mm.	25 mm.
Length > > > . . .	12 1/2 >	14 3/4 >
Distance between the external orbital angles	10 1/3 >	11 2/3 >

I add the measurements of the three specimens of *Epix. frontalis* M. E., mentioned above:

	♂	♂	♀
Breadth of the cephalothorax	30 mm.	20 2/3 mm.	24 1/2 mm.
Length > > >	18 >	12 1/2 >	14 1/3 >
Distance between the external orbital angles	15 >	11 >	12 1/3 >

The upper surface of the cephalothorax of *Epix. subcorrosus* seems to be ornamented with a few symmetrically arranged small spots.

7. *Cardisoma quadratum* de Sauss.

Cardisoma quadrata, de Saussure, Mém. pour servir à l'Histoire naturelle du Mexique, des Antilles et des Etats-unis. 1^e Livraison, Crustacés, p. 22, fig. 13. 1858.

Cardisoma quadratum, S. J. Smith, in: Transactions Connecticut Acad. of Arts and Sciences, vol. II, 1869, p. 16.

One adult male from the West-Indies, collected by Mr. Neervoort van de Poll, and a somewhat younger female, collected at the Island of Aruba by Prof. Martin.

These specimens have certainly reached the largest size which this species may attain; they are considerably larger than those which were measured by Smith. Nevertheless they present still distinctly all the characters by which this species differs from *Cardisoma Guanhum*i. According to de Saussure the distance between the external orbital angles is, in young specimens, a little longer than the length of the cephalothorax and measures $\frac{5}{8}$ of the breadth of the latter. In the female specimen the external orbital angles are exactly as far distant from one another as measures the length of the cephalothorax, and in the male the length of the cephalothorax is a little larger than the distance between the external orbital angles. Both in the male and in the female there is a very small, though distinct epi-branchial tooth at a short distance behind the acute external orbital angles, and the raised line defining the antero-lateral margins is still distinctly developed in both individuals. The lateral sides of the cephalothorax are somewhat swollen, and project but little beyond the raised lines which define the lateral margins.

The orbits are comparatively high and only little more than once and a half as broad as high; they are comparatively a little higher in the male than in the female specimen, and a little broader than the anterior margin of the front. The inferior margins of the orbits pass with an obtuse rounded angle to the extra-orbital teeth. The

Notes from the Leyden Museum, Vol. XIII.

basal joint of the external antennae is slightly enlarged and about once and a half as broad as high, and has the anterior margin emarginate for the insertion of the second joint.

In the male the larger chelipede is on the left, in the female on the right side. In both specimens the arm is sharply trilateral, and the internal as well as the external margin of the under surface are armed with several more or less acute small teeth, more developed in the female than in the male, whereas the upper margin is transversely wrinkled. The outer surface of the arm is somewhat granular. The upper surface of the carpus is almost smooth in the larger, but distinctly granulated on the inner and outer sides in the smaller chelipede; the carpus of the larger chelipede is armed with a small acute tooth at the inner angle of its upper surface, that of the smaller with a longer and more acute tooth. The larger hand is about as long as the breadth of the cephalothorax. The upper and especially the lower margin of the palm are granulate, the outer surface is smooth and punctate, the inner surface a little granular. The upper margin of the mobile and the lower margin of the immobile finger of the larger hand are covered with small sharp granules. The fingers of the larger hand of the male are a little gaping, scarcely also those of the female.

The meropodites of the ambulatory legs are armed with an acute tooth at the distal end of their upper margin. The legs are somewhat hairy and covered, especially on the propodites and carpopodites, with tufts of rather short black hairs.

This species is most closely allied to *Cardisoma armatum* Herklots from the western coast of Africa, as is already observed by S. J. Smith, but I may add that it likewise so strongly resembles *Card. Urvillei* M. E., which inhabits the islands of Samoa, Celebes and the Moluccas, that it also might be mistaken for this Indian species.

Measurements:	♂	♀
Distance between the ext. orb. angles	56	mm. 52½ mm.
Greatest width of the cephalothorax, the swollen lateral parts of the body included	75	» 70 »
Length of the cephalothorax . . .	59	» 53 »
Breadth of the orbits	19	» 18 »
Height » » »	11¾	» 10½ »
Length of the larger hand . . .	77	» 67½ »

Genus *Gelasinus* Latr.

I am acquainted by personal observation with fifteen Indopacific species of this genus, which may be distinguished by the following characters:

- I. Front between the eyes narrow.
 - A. Lower wall of the orbits without an accessory row of granules near the inferior margin.
 - α. Anterior margin of the arm of the larger chelipede of the male with an acute and prominent tooth. Cephalothorax little narrowed backwards.
 - β. Orbits only a little oblique. Hand internally with two strongly granulated ridges. *vocans* M. E.
 - ββ. Orbits very oblique. Hand internally without granulated ridges. *tetragonon* Herbst.
 - αα. Anterior margin without an acute and prominent tooth. Cephalothorax more or less strongly narrowed posteriorly.
 - γ. Lower finger or index with a single tooth a little before the middle. Hands elongate. *Dussumieri* M. E.

77. Lower finger with two teeth.
 δ. Lateral margin arcuate
 in the shape of an S.
 Frontal furrow narrow. . . *arcuatus* de Haan.
 δδ. Lateral margin nearly
 straight, very oblique.
 Frontal furrow broad. . . *acutus* Stimpson.
 AA. Lower wall of the orbits ornamented
 with an accessory row of granules.
 Cephalothorax more or less narrowed
 backwards.
 α. Mobile finger or dactylus with a
 prominent lobe or tooth at the
 distal extremity *coarctatus* M. E.
 αα. Mobile finger without a promi-
 nent tooth at the distal extremity.
 β. Lower finger with two only
 slightly promin. lobes or teeth. *forcipatus* (Ad. &
 ββ. Lower finger presenting but White) de Man.
 one single tooth.
 γ. Tooth of the lower finger
 conical, a little before
 the middle. *Urvillei* M. E.
 γγ. Tooth of the lower finger
 broadly triangular, a little
 beyond the middle. . . *signatus* Hess.
 II. Front between the eyes broad.
 A. Lower oblique crest of the inner sur-
 face of the palm quite absent. Dactylus
 (mobile finger) with a prominent
 tooth at the distal extremity. . . *inversus* Hoffm.
 AA. Lower oblique crest more or less
 distinct. Dactylus without a tooth
 at the extremity.
 α. Upper border of the palm mar-
 gined by a slightly raised edge.

Notes from the Leyden Museum, Vol. XIII.

- β . Cephalothorax moderately narrowed backwards. Hand elongate, fingers considerably longer than the palm. Dactylus not furrowed on its outer surface. *Gaimardi* M. E.

- | | |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $\beta\beta$. Hand rather short, fingers little longer than the palm. | <p>Cephalothorax moderately narrowed backward. Fingers scarcely longer than the palm. Dactylus not furrowed on its outer surface. Inner surface with two parallel rows of slightly prominent granules near the articulation of the fingers <i>chlorophthalmus</i> Latr.</p> <p>Cephalothorax extraordinarily narrowed backward. Fingers almost once and a half as long as the palm. Dactylus with a distinct longitudinal impression on the outer surface. Only one single row of granules near the articulation of the fingers. <i>triangularis</i> A. M. E.</p> |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

$\alpha\alpha$. Upper border of the palm rounded.

- γ . Cephalothorax scarcely narrowed backwards. Antero-lateral margins nearly parallel. Inner margin of the index only slightly arcuate before the tip. *lacteus* de Haan.

- $\gamma\gamma$. Cephalothorax distinctly narrowed backwards. Antero-lateral margins oblique and convergent. Index with

a prominent tooth immediately before
the extremity. *annulipes* Latr.

8. *Gelasimus vocans* M. E.

(Pl. 2, fig. 5).

Gelasimus vocans, H. Milne Edwards, in: Annales des Sciences Naturelles, T. XVIII, 1852, p. 145, Pl. III, fig. 4.

Gelasimus vocans, de Man, in: Notes from the Leyden Museum, Vol. II, 1880, p. 67. — Miers, Report on the Brachyura of the Challenger Expedition, 1886, p. 242.

I have before me the following specimens, about which I will remark the following.

Three male specimens collected at Atjeh, Sumatra, from my own collection. They apparently belong to the typical form of this species, and I have figured the larger hand of one of them (fig. 5). The inner margin of the immobile finger is armed with two triangular, prominent teeth, of which the distal one is slightly larger than the other, and with a third very small one quite at the base; the mobile finger presents two small prominent teeth near the base and a third still smaller one which is found a little before the prominent distal tooth of the index. The two crests on the inner surface of the palm are strongly developed.

Secondly a male from the Island of Morotai. This specimen only differs from the foregoing ones by the two prominent teeth of the lower finger, these being about of the same form and size.

In the third place an adult male and an ova-bearing female from the Fiji Islands, and two somewhat younger males and a female from the Samoa Islands. In these specimens the larger hand of the male appears a little more elongate than in the Atjeh-specimens, i. e. slightly longer in proportion to the height, and the lower margin is less strongly arcuate. The middle one of the three teeth of the immobile finger is much less prominent, more or

Notes from the Leyden Museum, Vol. XIII.

less rounded and agrees with the quoted figure of Milne Edwards; the distal tooth is also comparatively smaller, especially in the adult male from Fiji. In the latter the dactylus is also comparatively higher than in the other specimens, so that the fingers leave a small hiatus between them when closed, and the dactylus presents no trace of the small distal tooth which exists in the other specimens. These individuals from the Fiji and Samoa Islands are probably to be referred to the variety *cultrimanus* Ad. & White, though, according to Miers, in the type-specimens of that form the proximal tooth of the two large triangular teeth of the index is always entirely wanting, whereas a trace of it still exists in our specimens. I have figured the hand of the larger male from Samoa (fig. 5^a).

The larger hand of one of the Atjeh males has a length of $31\frac{1}{2}$ mm. and is 14 mm. high; these numbers are for the adult male from Fiji $42\frac{1}{2}$ mm. and $17\frac{1}{3}$ mm., and for the larger male from Samoa 33 mm. and 13 mm.

9. *Gelasimus tetragonon* Herbst.

(Pl. 2, fig. 6).

Gelasimus tetragonon, Herbst: Milne Edwards, l. c. p. 147, Pl. III, fig. 9. — Kingsley, in: Proc. Acad. Nat. Sciences of Philadelphia, 1880, p. 143, Pl. IX, fig. 11.

Gelasimus variatus, Hess, Beiträge z. Kenntniss der Decapodenkrebse Ost-Australiens, 1865, p. 20, Pl. VI, fig. 7.

An adult male and two very young males from Tahiti, and a fine male and a female without eggs from the Samoa Islands.

The nearest ally of this species is *Gelas. vocans* M. E. The cephalothorax of *Gelas. tetragonon* is, however, strongly convex in the antero-posterior direction, much more than that of *Gelas. vocans*, the orbits have a much more oblique direction and the front and the frontal furrow are comparatively broader. The lateral margins of the cephalothorax are indicated in both

Notes from the Leyden Museum, Vol. XIII.

species by a minutely granulated, little prominent line. In both species also the cephalothorax appears little narrowed backwards and they may be distinguished already by this character alone, at first sight, from many others, as e. g. from *Gelas. Dussumieri*, *arcuatus*, *coarctatus*, *acutus*, *Urvillei* etc. The inferior orbital margin does not present even a trace of an accessory row of granules, which occurs in other species, as e. g. *Gelas. signatus* Hess, neither in the male nor in the female.

In both species the anterior margin of the arm of the larger chelipede of the male is armed with an acute prominent tooth near the distal end. The carpopodite is perfectly smooth on its rounded external surface, and presents only a few minute granules on the upper surface towards the inner margin. The larger hand shows some resemblance, as to its general form, to that of *Gelas. acutus* Stimps. (vide de Man, in: Journal Linnean Soc. of London, Vol. XXII, Pl. VIII), but the inner surface of the palm, though being somewhat granulated, does not bear the granulated ridges which exist in that species and which are so strongly developed in *Gelas. vocans*. The outer surface of the palm is rather finely granulated, the fingers are only a little longer than the palm. The immobile finger, which is slightly curved upward, presents, about as in *Gelas. vocans*, a shallow pit at its base and is here a little more coarsely granulated; it is marked on this place with a large red patch, which, according to Miers, extends sometimes over the whole outer surface of the palm. Both fingers are regularly tapering. The lower finger bears two little prominent teeth or prominences on the distal half of the inner margin; on the dactylus only six or seven somewhat larger and several smaller granules occur.

The fingers of the smaller hand of the male are a little shorter in proportion to the length of the palm than in *Gelas. vocans*.

The ambulatory legs fully resemble those of the latter species.

Notes from the Leyden Museum, Vol. XIII.

Gelas. tetragonon Herbst is distributed from the Red Sea and Zanzibar to the Sandwich Islands, Tahiti and Sydney (Hess).

10. *Gelasimus Dussumieri* M. E.

Gelasimus Dussumieri, H. Milne Edwards, in: Annales des Sciences Naturelles, T. XVIII, 1852, p. 148, Pl. IV, fig. 12.

Gelasimus Dussumieri, de Man, in: Journal Linnean Soc. of London, Vol. XXII, 1888, p. 108, Pl. VII, fig. 2—7.

The Leyden Collection contains five male specimens from Java, some of which are adult, a male from the Island of Nossy-Faly near Madagascar, a large number of rather young specimens, both males and females, from Amboina, and two male specimens from the Island of Ponapé, purchased from the Museum Godeffroy. I have given a complete description of this common Indian species in my "Report on the Crustacea of the Mergui Archipelago", so that I will only add the following remarks.

In the specimen from Nossy-Faly the immobile finger of the larger hand is rudimentary; this hand has been figured by Hoffmann (Crustacés de Madagascar, 1874, Pl. III, fig. 22).

In a few male specimens of those collected at Amboina and which are all very young, I observe a trace of an accessory row of granules on the walls of the orbits near the inferior margin. This fact is of some importance as there is usually in this species no trace of that accessory row. But as the cephalothorax of these individuals has exactly the same form as that of the other specimens, being quite as long in proportion to the distance between the external orbital angles, and as they have been collected in the same locality, they are without any doubt to be referred to the same species.

It is not easy to indicate the differences by which *Gelas. Dussumieri* may be distinguished from the Japanese *Gelas. arcuatus* de Haan. The lateral margins of the cephalotho-

Notes from the Leyden Museum, Vol. XIII.

rax have a different direction; they form a regularly undulate, S-like line in the species of de Haan, different from what is seen in *Gelas. Dussumieri*.

The two longitudinal grooves by which the gastric and cardiac regions are separated from the branchial regions, are deep in the male of *Gelas. Dussumieri*, but rather shallow in the other species. The external orbital angles are much more acute and directed more obliquely outward than those of *Gelas. arcuatus*.

The larger hand of the male has a different form in both species. The lower finger of *Gelas. Dussumieri* is constantly armed with only one single prominent tooth a little before the middle, but for the rest it is unarmed and terminates in an acute point, slightly curved upward. The dactylus or mobile finger presents only some more or less prominent granules along its proximal half. The lower finger of *Gelas. arcuatus*, on the contrary, presents always two teeth, one a little before or in the middle, the other near the extremity, and more or less prominent granules are observed in this species along the whole length of the inner margin of the dactylus.

The ambulatory legs, finally, are a little less slender in *Gelas. arcuatus*, the meropodites being slightly more enlarged.

I give the measurements of some specimens:

	Millim.			
	1.	2.	3.	4.
Distance between the ext. orb. angles	$37\frac{2}{3}$	$23\frac{1}{4}$	$18\frac{1}{3}$	$15\frac{1}{2}$
Length of the cephalothorax (front				
included)	$22\frac{1}{4}$	14	$11\frac{1}{3}$	$9\frac{3}{4}$
Length of the larger hand . . .	72	41	$22\frac{1}{2}$	$18\frac{1}{2}$
» » » palm of ditto . . .	18	12	$9\frac{1}{2}$	9

N^o. 1, adult male from Java; N^o. 2, male from Ponapé; N^o. 3, young male from Amboina without, and N^o. 4, young male from Amboina provided with a trace of an accessory row of granules near the inferior margin of the orbits.

Notes from the Leyden Museum, Vol. XIII.

11. *Gelasimus arcuatus* de Haan.

(Pl. 3, fig. 7).

Gelasimus arcuatus, de Haan, Fauna Japonica, Crustacea, p. 53.
Pl. VII, fig. 2.

This Japanese species is apparently still insufficiently known. I have before me two typical specimens from the Leyden Museum, one of which agrees exactly with the quoted figure in de Haan's classical work, whereas the other represents an interesting individual variety.

It differs from *Gelas. vocans* M. E. and *Gelas. tetragonon* Herbst by the form of the cephalothorax, which is strongly convex in the antero-posterior direction, and considerably narrowed backwards; its lateral margins, defined by a rather prominent carina which is only slightly granulated anteriorly, present a characteristical S-like course, which has been very well figured by de Haan. The orbits are transverse, so that the acute external orbital angles, which are directed almost straightly forward and scarcely outward, project nearly as far forward as the middle portion of the upper orbital margin. The inferior one of the two lines which form the upper orbital margin is distinct and tolerably far distant from the upper line. The inferior margin presents no trace of an accessory row of granules; this margin is distinctly crenulate along its whole length. The frontal furrow is narrow and linear with parallel margins, but its form appears rather triangular in the figure of de Haan, which is not exact.

The anterior margin of the arm of the larger chelipede of the male is never armed with a prominent tooth, which exists in *Gelas. vocans* and in *Gelas. tetragonon*, but it bears only a few small granules. The upper surface of the wrist is rather coarsely granulated, considerably flattened and distinctly separated from the entirely smooth and convex outer surface. The size of the larger chela is somewhat variable; in some specimens it is twice as long

as the width of the cephalothorax, and a similar specimen has been figured by de Haan, but in the other type specimen the larger hand is scarcely more than once and a half as long as the distance between the external orbital angles. The hand is rather elongate, but the comparative length of the fingers is as much variable as the length of the hand itself. In the specimen figured by de Haan the fingers are twice as long as the palm and considerably gaping, the dactylus being strongly arcuate. In the other specimen the little gaping fingers are slightly more than once and a half as long as the palm; the upper finger is straight, the larger hand presents some resemblance to that of *Gelas. vocans* M. E. The outer surface of the palm is coarsely granulated, the granules being largest towards the slightly concave base of the immobile finger. In *Gelas. vocans* the immobile finger is more distinctly concave at the base than in the species of de Haan and almost quite smooth, whereas in *Gelas. arcuatus* it is also covered with granules. In both species the upper border of the palm is distinctly margined. The fingers have nearly parallel margins in the specimen figured by de Haan, and they are tapering only near the extremities; but in the other specimen they are regularly tapering towards the tips. Both fingers are longitudinally furrowed on the middle of their outer surface, whereas the mobile finger of *Gelas. vocans* and of *Gelas. tetragonon* is never furrowed on its outer surface.

The inner margin of the lower finger presents a more or less prominent tooth a little before the middle in the specimen similar to that which was figured by de Haan, and a second less prominent one a little before the extremity; in the other specimen, with shorter hand, the first tooth stands almost in the middle of the margin. The small tooth which in *Gelas. vocans* is observed at the base of this finger, does not occur in *Gelas. arcuatus*. The dactylus or upper finger appears somewhat granulated at the base; its inner margin is armed in the specimen with

elongate hand with two small teeth, one of which stands a little before the first prominent tooth of the index, the other a little before the subdistal tooth of the latter. In the other specimen it is not provided with prominent teeth, but it presents only several granules, four or five of which are larger than the others, and the largest of which lies quite opposite the prominent tooth on the middle of the index. The ordinary crests on the inner surface of the palm are distinct and coarsely granulated. The ambulatory legs are less slender than those of the three preceding species; the meropodites are more enlarged in proportion to their length, so that e. g. those of the penultimate pair are exactly twice as long as broad.

I will finally observe that *Gelas. acutus* Stimps. from Macao and from the Mergui Archipelago, of which I have published a complete description in my "Report on the Mergui Crustacea", is somewhat allied to *Gelas. arcuatus* de Haan. The anterior as well as the ambulatory legs present indeed the most striking resemblance in both species, when comparing Stimpson's species with the variety of *Gelas. arcuatus* in which the fingers of the larger hand of the male are little longer than the palm. But the cephalothorax of *Gelas. acutus* is still more narrowed backwards; the lateral margins are straight, extremely oblique and not presenting an S-like course; the external orbital angles, finally, are much more acute and directed very obliquely outward, projecting much less forward than the middle part of the upper orbital margin.

The measurements of the two Leyden types of *Gelas. arcuatus* de Haan are as follows:

	1.	2.
	♂	♂
Distance between the ext. orb. angles	36 $\frac{1}{2}$ mm.	34 $\frac{1}{2}$ mm.
Length of the cephalothorax (front included).	22 $\frac{1}{3}$	20 $\frac{3}{4}$
Length of the larger hand . . .	67	54 $\frac{1}{2}$
Height of the palm.	21	19 $\frac{1}{2}$
Length of the fingers	46	33 $\frac{1}{2}$

Notes from the Leyden Museum, Vol. XIII.

12. *Gelasimus coarctatus* M. E.

(Pl. 3, fig. 8).

Gelasimus coarctatus, H. Milne Edwards, l. c. p. 146, Pl. III, fig. 6. — A. Milne Edwards, in: Nouv. Archives du Muséum, T. IX, p. 272, Pl. XII, fig. 4.

Gelasimus forcipatus, Kingsley, l. c. p. 142, Pl. IX, fig. 9.

A fine male from the Moluccas, collected by Macklot, and a young male from the Island of Ponapé.

This species is closely allied to *Gelas. Dussumieri* and *Gelas. Urvillei*, but differs by the following characters.

The cephalothorax resembles much that of *Gelas. Dussumieri*, it being about quite as long in proportion to the distance between the external orbital angles, but the lateral margins are (at least in our two specimens) straight or even slightly concave and still more oblique. The narrow frontal furrow presents the same form in both species. The wall of the orbits is ornamented with an accessory row of granules near the inferior margin; the row consists only of four or five rather prominent granules.

The larger hand of the male closely resembles that of *Gelas. Dussumieri*, but it may always be distinguished by the existence of a prominent tooth near the extremity of the upper or mobile finger; this tooth is constantly wanting both in *Gelas. Dussumieri* and in *Gelas. Urvillei*. In the young male from Ponapé this distal tooth is already present. Both fingers are longitudinally furrowed on their outer surface.

Measurements:	♂	♂
Distance between the ext. orb. angles	26 $\frac{1}{4}$ mm.	15 $\frac{3}{4}$ mm.
Length of the cephalothorax . .	15 »	9 $\frac{2}{3}$ »

I think Kingsley is wrong when uniting *Gelas. forcipatus* White with this species, because in the former also the lower finger of the larger hand of the male seems to be

toothed, which is not the case in *Gelas. coarctatus*.

Gelas. coarctatus is known from the Philippine Islands, Australia and New Caledonia.

13. *Gelasimus forcipatus* Ad. & White?

(Pl. 3, fig. 9).

Gelasimus forcipatus, Adams and White, Voyage of H. M. S. Samarang, Crustacea, 1848, p. 50.

It is not but with much hesitation that I refer a fine male specimen from the Indian Archipelago, probably from the shores of Celebes, to this species, which is only known to me by the short latin diagnosis reproduced by Milne Edwards (Ann. Sc. Nat. T. XVIII, 1852, p. 147).

This crab closely resembles the described variety of *Gelas. arcuatus* de Haan, in which the fingers of the larger hand are but little longer than the palm; it differs by the following characters. The lateral margins of the carapace are a little more oblique, so that the external orbital angles are more acute and directed a little more obliquely outward than in the species of de Haan. The front presents the same form and the orbits are equally transverse. The lower wall of the latter, however, is ornamented near the inferior margin with an accessory row of eight or nine small granules, which are not found in *Gelas. arcuatus* de Haan. The abdominal segments are comparatively a little less enlarged than in the Japanese species.

The larger hand has the same length, being almost once and a half as long as the distance between the external orbital angles. The palm, which is but little shorter than the fingers and almost as high as long, appears comparatively a little higher than the palm of *Gelas. arcuatus*. The outer surface is densely granulated and the granulation is a little finer and closer, the granules being somewhat smaller

Notes from the Leyden Museum, Vol. XIII.

than in the species of the "Fauna Japonica". The upper border of the palm is margined and the lower border granulated about in the same manner in both species. The two crests on the inner surface of the palm are coarsely granulated in both forms. As I already observed, the fingers are scarcely longer than the palm and both are faintly furrowed in a longitudinal direction on their outer surface. They are regularly tapering and present about the same form as in the described variety of *Gelas. arcuatus*; the mobile finger is granulated at the proximal end of its upper margin. The inner margin of the dactylus is similar to that of the other species and armed with fourteen or fifteen granules, of which one in the middle and a few near the extremity are a little more prominent. The lower finger or index is scarcely concave at the base of its outer surface and armed along its inner margin with about the same number of granules; one of them, situated in the middle, is somewhat prominent and tooth-like, and a few at the extremity are also a little more prominent. These two prominences are, however, much less developed than in *Gelas. arcuatus*. The ambulatory legs, finally, have about the same form.

The upper surface of the cephalothorax of our specimen, preserved in spirits, is green anteriorly, violet posteriorly and on the lateral sides. The head is of a uniform reddish tinge.

I cannot identify this species with *Gelas. dubius* Stimpson from the Loo Choo Islands, because the orbits are not more oblique than those of *Gelas. vocans*, and because the lateral margins are distinct.

Gelas. acutus Stimpson (pl. 3, fig. 10) differs by the cephalothorax being more strongly narrowed backwards, by the nearly straight and extremely oblique lateral margins, and by the absence of an accessory row of granules on the walls of the orbits.

Measurements:

	♂
Distance between the external orbital angles. .	34 mm.
Length of the cephalothorax (front included). .	20 "

Notes from the Leyden Museum, Vol. XIII.

Length of the larger hand.	53 mm.
Height of the palm	21 »
Length » »	24 »

14. *Gelasimus Urvillei* M. E.

Gelasimus Urvillei, H. Milne Edwards, l. c. p. 148, Pl. III, fig. 10.

Gelasimus Dussumieri, Hilgendorf, in: Baron von der Decken's Reise in Ost-Africa, Crustaceen, p. 84, Taf. IV, fig. 1.

Three probably adult males, collected by Messrs. Pollen and van Dam on the Island of Nossy-Faly.

Prof. Milne Edwards enabled me to study the original type-specimen of this species, which was discovered at Vanicoro, and which has been figured by his father.

The three Nossy-Faly individuals, which have been described by Hoffmann as *Gelas. Dussumieri*, perfectly agree with the Paris type, and belong evidently to the same species. They are, however, considerably larger than the Paris type, which is a rather young specimen.

Hilgendorf has published a very good figure of *Gelas. Urvillei*, for the specimens referred by him to *Gelas. Dussumieri*, evidently belong to *Gelas. Urvillei*. I refer therefore to those figures.

The nearest ally of this species is indeed *Gelas. Dussumieri* M. E. It differs firstly by the shape of the cephalothorax, which is a little shorter in proportion to the distance between the external orbital angles; the cephalothorax appears therefore slightly more enlarged anteriorly. In the second place the lateral margins are more oblique, so that the upper surface of the cephalothorax appears a little more narrowed backwards. The walls of the orbits are constantly ornamented near their inferior margin with an accessory row of small granules: I observe about ten or eleven granules which are placed near the middle portion of the lower margin of the orbits.

The anterior legs of the male quite resemble those of

Gelas. Dussumieri and I cannot find any essential difference. The hand of the larger specimen perfectly agrees with Hilgendorf's figure 1c, those of the two other specimens belong to a variety, which occurs also in *Gelas. Dussumieri* and which is characterized by the lower finger being fully unarmed. The meropodites of the ambulatory legs, finally, are a little more enlarged than those of *Gelas. Dussumieri*.

I give the measurements, in millimeters, of two specimens from Nossy-Faly, of the Paris type-specimen of *Gelas. Urvillei*, and of two male specimens of *Gelas. Dussumieri* from the Mergui Archipelago.

	1	2	3	4	5
	♂	♂	♂	♂	♂
Distance between the ext. orb. angles . . .	24 $\frac{1}{2}$	23 $\frac{3}{4}$	18 $\frac{3}{4}$	26	20 $\frac{1}{2}$
Length of the cephal. (front included) . . .	13 $\frac{3}{4}$	13	10 $\frac{1}{2}$	15 $\frac{1}{2}$	12 $\frac{3}{4}$
Length of the larger hand	41	37 $\frac{1}{2}$	17 $\frac{1}{2}$	34 $\frac{1}{2}$	22 $\frac{1}{2}$
Length of the palm of the larger hand. . .	13 $\frac{1}{2}$	10	6 $\frac{1}{2}$	9 $\frac{1}{2}$	8 $\frac{1}{2}$

Nº. 1 and 2 are Nossy-Faly specimens of *Gelas. Urvillei*.

Nº. 3. Paris type of *Gelas. Urvillei*.

Nº. 4 and 5. Male specimens of *Gelas. Dussumieri*.

The proportion of the distance between the external orbital angles, and the length of the cephalothorax is therefore in *Gelas. Urvillei* as 25 : 14, in *Gelas. Dussumieri* as 25 : 14 $\frac{3}{4}$, or as 25 : 15.

15. *Gelasimus signatus* Hess.

(Pl. 4, fig. 11).

Gelasimus signatus, Hess, Beiträge zur Kenntniss der Decapoden-krebse Ost-Australiens, 1865, p. 20, Taf. VI, fig. 6.

Gelasimus signatus, Miers, Report on the Zoolog. Collect. made during the voyage of H. M. S. Alert, 1884, p. 236.

Gelasimus signatus, de Man, in: Zoolog. Jahrbücher, herausgegeben von J. W. Spengel, Bd. II, 1887, p. 697.

Gelasimus bellator, Kingsley, l. c. p. 138, Pl. IX, fig. 3. (an etiam *Gelas. bellator* White?).

Two adult male specimens from the eastern coast of Australia. As to its general appearance, the cephalothorax

Notes from the Leyden Museum, Vol. XIII.

of this species closely resembles that of *Gelas. arcuatus* de Haan, but it differs by the different form of the front and by the existence of an accessory row of small granules on the lower wall of the orbits near the inferior margin. The front of *Gelas. arcuatus* is more distinctly constricted at the insertion of the eye-peduncles than in the other species; the frontal furrow extends beyond the middle of the front, is narrow, and its margins are parallel, but in *Gelas. signatus* the frontal furrow does not or only scarcely reach the middle of the front and it is broadly triangular, with rounded tip, and with divergent lateral margins (fig. 11^a). The orbits are transverse, quite as those of *Gelas. arcuatus*, but they are ornamented below with an accessory row of fourteen or fifteen small granules near the middle of the inferior margin, which are not found in the species of de Haan. The lateral margins have the same form and direction as those of *Gelas. arcuatus*, as they have the same undulated course in the form of a S. The abdomen of the male is a little less enlarged than in the Japanese species.

In both specimens the larger hand occurs on the left side. The anterior and the lower margin of the arm are finely granulate and the anterior margin presents a more or less distinct, compressed and denticulate lobe at the distal end. The outer surface of the wrist is smooth, the upper one is finely granulate and the internal margin somewhat denticulate. The hand (fig. 11^b) presents the same elongate and slender form as that of *Gelas. Dussumieri* and is a little more than once and a half as long as the distance between the external orbital angles. The outer surface of the palm is more finely granulate than in *Gelas. Dussumieri*; like in this species the inner surface of the palm is somewhat granulated in the middle and the two ordinary oblique rows of larger granules are equally distinct in both species. The fingers are twice and a half as long as the palm, and therefore appear comparatively as long

as those of *Gelas. Dussumieri*; they are smooth and as strongly compressed on the outer as on the inner surfaces. The outer surface of the lower finger is longitudinally furrowed and this furrow proceeds close to the lower margin of the finger; in *Gelas. Dussumieri* this furrow proceeds quite on the middle of the outer surface of that finger. The outer surface of the upper finger or dactylus is also faintly furrowed and the furrow proceeds on the middle of the finger. Whereas the immobile finger of *Gelas. Dussumieri* presents a prominent conical tooth a little before the middle, the inner margin of the lower finger of *Gelas. signatus* is armed with a broadly triangular lobe or tooth of a characteristic form at some distance beyond the middle (fig. 11^b); in the larger specimen the distance between the tip of this lobe and the extremity of the finger is distinctly shorter than the distance between the tip of the tooth and the base of the finger, but in the smaller specimen, the fingers of which are a little shorter in proportion to the length of the palm, the tip of the triangular lobe lies exactly as far from the base as from the extremity of the finger. The upper finger or dactylus has exactly the same form as that of *Gelas. Dussumieri* and the same dentition: I observe one small granule immediately before or opposite the tip of the large lobe of the index, and three or four granules near the proximal end of the finger.

The ambulatory legs present about the same form in both species.

The cephalothorax of these two specimens has a dark green colour; arm, carpus and palm of the larger chelipede are yellowish red, the fingers white.

The larger individual has the following dimensions:

	♂
Distance between the external orbital angles. . .	21 mm.
Length of the carapace (the front included). . .	12½ »
Length of the larger hand	34 »
Length of the fingers	24 »

Notes from the Leyden Museum, Vol. XIII.

Gelasimus signatus inhabits the eastern coasts of Australia. *Gelas. bellator* Kingsley is certainly the same species, though Kingsley describes only one row of granules on the inner surface of the palm. But I do not know whether *Gelas. bellator* Ad. & White is also identical with this species or not.

16. *Gelasimus signatus* Hess, var.:
angustifrons de Man.

(Pl. 4, fig. 11c).

The Leyden Museum contains twenty six specimens (twenty males and six females) of a *Gelasimus*, which I consider to form a distinct variety of *Gelas. signatus* Hess. They were collected on the seashore of Batavia, and only one female is provided with eggs. These specimens, which are of a somewhat smaller size than the two typical individuals from the eastern coast of Australia, which I have described above, indeed exactly agree in all their characters with these Australian types, with exception of the front. This latter is namely a little narrower in proportion to the distance between the external orbital angles and the frontal furrow is longer, reaches beyond the middle of the front and appears also much narrower with only little divergent lateral margins. I must, however, observe that in some specimens these characters are more distinctly pronounced than in others. The accessory row of granules on the lower walls of the orbits is distinctly present in all these individuals, both in the males and in the females.

In the fifteen male specimens, which are provided with their larger chelipede, eleven have it on the left and only four on the right side of the cephalothorax. This chelipede agrees perfectly with the Australian types, presenting as distinctly the characteristic triangular lobe or tooth beyond the middle of the lower finger, and the dactylus presenting quite the same granules. In one specimen the fingers are a little narrower and more slender than usual, and appear

Notes from the Leyden Museum, Vol. XIII.

also a little longer in proportion to the shorter palm. In another, on the contrary, the fingers are a little higher in proportion to their length as ordinarily and the lobe of the index is rounded and but little prominent. These are, however, individual variations.

I must finally remark that the coloration of these specimens differs also a little from the type, as the arm, the carpus and the palm of the larger hand are of a pale greenish or bluish gray colour, instead of presenting the yellowish red observed in the type.

Dimensions of the two largest specimens:

	♂	♀
Distance between the external orbital angles	17 $\frac{1}{2}$ mm.	14 $\frac{2}{3}$ mm.
Length of the cephalothorax . . .	10 $\frac{1}{2}$ "	9 $\frac{1}{2}$ "
Length of the larger hand . . .	26 $\frac{1}{2}$	
" " " fingers	17 $\frac{1}{2}$	

17. *Gelasimus annulipes* Latr.

Gelasimus annulipes. Latreille, H. Milne Edwards, l. c. p. 149, pl. 4, fig. 15. — de Man, in: Notes from the Leyden Museum, Vol. II, 1880, p. 69; idem, in: Journal of the Linnean Soc. of London, Vol. XXII, 1888, p. 118, Pl. VIII, fig. 5-7; idem, in: Archiv f. Naturgeschichte, Jahrg. 53, 1888, p. 353.

Two male specimens belong to that variety, in which the larger hand is more slender and more elongate. In a typical specimen from the Mergui Archipelago the larger hand has a length of 22 $\frac{3}{4}$ mm. and a height of 8 $\frac{1}{4}$ mm. In the two specimens from Upolu these numbers are 24 $\frac{1}{2}$ mm. and 7 $\frac{1}{4}$ mm. for the larger, 23 mm. and 7 $\frac{1}{4}$ mm. for the smaller specimen. This variety occurs also in Amboina.

18. *Gelasimus Gaimardi* M. E.

Gelasimus Gaimardi, H. Milne Edwards, l. c. p. 150, Pl. IV, fig. 17.

I refer to this species a male and a female from Samoa

Notes from the Leyden Museum, Vol. XIII.

some mostly young individuals from the Banda Sea, and twelve young specimens from Amboina.

This species is closely allied to the preceding and to *Gelas. Latreillii* M. E., of which I have a Paris type before me. The cephalothorax is strongly convex in the antero-posterior direction and comparatively a little longer in proportion to the distance between the external orbital angles than that of *Gelas. annulipes*. The orbits in the male are rather much oblique, the external orbital angles acute and directed obliquely outward, whereas they are directed straightly forward in *Gelas. lacteus* de Haan. The lateral margins are rather oblique and converge rather much backwards, a little more in the male than in the female. I do not observe accessory granules on the wall of the orbits of the females near the lower margin, which exist in the female of *Gelas. annulipes*.

The larger hand of the male agrees with the figure of Milne Edwards (Pl. IV, fig. 17a). The distal crest on the inner surface near the articulation with the dactylus is represented in the male from Samoa only by two small granules, and the other is also very indistinctly granulated; but in the male from the Banda Sea I observe two parallel distal rows of granules near the articulation of the mobile finger. I suppose that the development of these rows of granules is somewhat variable according to the individuals. In both males the lower finger presents a very small tooth close to the extremity; it bears, moreover, some more or less prominent granules, and in the male from the Banda Sea even a small tooth in the middle of the margin. The upper finger is strongly arcuate in the male from Samoa and appears unarmed, but in the male from the Banda Sea a few prominent granules are observed along the proximal half of the margin.

The meropodites of the ambulatory legs are a little more enlarged than those of *Gelas. annulipes*.

Measurements:	♂ Samoa.	♂ Banda.
Distance between the external orbital angles	$18\frac{2}{3}$ mm.	$17\frac{2}{5}$ mm.
Length of the cephalothorax	$11\frac{1}{2}$ »	$10\frac{3}{4}$ »
» » » larger hand	28 »	27 »
Length of the meropodites of the last pair of legs	$6\frac{1}{2}$ »	$6\frac{2}{5}$ »
Breadth of the meropodites of the last pair of legs	$2\frac{2}{5}$ »	$2\frac{1}{5}$ »

I add the dimensions of the Paris type of *Gelas. Latreillii*:

	♂
Distance between the external orbital angles	$22\frac{1}{2}$ mm.
Length of the cephalothorax	$13\frac{1}{4}$ »
Length of the larger hand	37 »
» » » fingers of the larger hand	25 »
» » » meropodites of the last pair of legs	9 »
Breadth of the meropodites of the last pair of legs	$4\frac{1}{4}$ »

The meropodites of the ambulatory legs are rather considerably enlarged in *Gelas. Latreillii*, being only twice as long as broad; they are less enlarged in *Gelas. Gaimardi* and in *Gelas. annulipes*, whereas those of *Gelas. lacteus* are still narrower, as they are almost four times as long as broad.

19. *Gelasimus chlorophthalmus* Latr.

Gelasimus chlorophthalmus, Latreille; H. Milne Edwards, Hist. Nat. des Crustacés, T. II, 1837, p. 54, and in: Annales des Sciences Natur. T. XVIII, 1852, p. 150, Pl. 4, fig. 19.

Nec: *Gelas. chlorophthalmus*, Hilgendorf, in: Monatsberichte der königl. Akad. der Wissensch. Berlin, 1878, p. 803.

Two specimens, a male and a female, were presented

Notes from the Leyden Museum, Vol. XIII.

in 1878 by Milne Edwards to the Leyden Museum under the name of *Gelas. Latreillii*. As I thought this name to be incorrect, I lately sent back the male specimen to Paris, whereupon Prof. Milne Edwards informed me that it is a true representative of *Gelas. chlorophthalmus* Latr.

The nearest ally of this species is *Gelas. Gaimardi* M. E., but they may be distinguished by the different form of the larger hand of the male. The cephalothorax of the male presents exactly the same form in both species, I find no difference of any importance. The two lines of the upper orbital margin are a little more distant from one another than in *Gelas. Gaimardi*. As to the cephalothorax of the female, I observe that the antero-lateral margins are directed a little more obliquely in *Gelas. Gaimardi* than in the species of Latreille, and that the two lines of the upper orbital margin are equally distant in both species. In both species there is no trace of an accessory row of granules near the lower orbital margin, neither in the male nor in the female.

The arm of the larger chelipede of the male has the same form in both species; in both I observe an obtuse tubercle a little before the distal end of the anterior margin, and in both the upper margin is a little granulated. In both the upper surface of the wrist is finely granulated. The larger hand of *Gelas. chlorophthalmus* is considerably higher in proportion to its length than in *Gelas. Gaimardi* and is only twice and a half as long as high, but that of *Gelas. Gaimardi* three times as long as high. Milne Edwards says that the palm is longer than the fingers; this is not the case on the figure which he published in 1853, nor in the male from New Caledonia. In our specimen the fingers are once and a third as long as the palm and the latter is quite as long as high. In both species the palm is margined on its upper border, which is not the case in *Gelas. annulipes*, where the upper border is simply rounded. The outer surface is exactly

thorax being dark green, the larger hand of a beautiful red, the fingers of a paler colour and the ambulatory legs reddish brown.

This species has been observed at Mauritius and seems to be very rare.

The two specimens were labelled »*Gelas. Latreillii*, Nouvelle Calédonie''; but this label not being applicable to these specimens, and Milne Edwards not quoting *Gelas. chlorophthalmus* amongst the species of New Caledonia, the locality where our specimens have been collected, remains uncertain.

20. *Gelasimus inversus* Hoffm.

(Pl. 4, fig. 12).

Gelasimus inversus, Hoffmann, Crustacés de Madagascar et de l'île de la Réunion, 1874, p. 19. Pl. IV, fig. 23—26.

Gelasimus chlorophthalmus, Hilgendorf, in: Monatsberichte königl. Akad. der Wissensch. zu Berlin, 1878, p. 803.

Three of the four original specimens of this species, which were described by Hoffmann, exist still in the Leyden Museum, unfortunately in a very bad and mutilated state. They have been collected on the Island of Nossy-Faly, where their indigenous name is »Cava tangena''.

There can be little doubt that the specimens referred to *Gelas. chlorophthalmus* by Hilgendorf belong to *Gelas. inversus*, and Hilgendorf, apparently, was not acquainted with Hoffmann's description. As this latter is rather complete, I will only compare the species with its nearest ally, viz. *Gelas. lacteus* de Haan.

The lateral margins of the cephalothorax are a little more oblique than those of the species of de Haan, in which the antero-lateral margins are directed forward and scarcely outward. As to the structure of the upper orbital margin, both forms fully agree with one another, the inferior of the two lines which constitute this margin, being very indistinct and scarcely separated from the upper line. The lower margin of the orbits of *Gelas. lacteus* appears slightly convex, when the cephalothorax is seen from above,

Notes from the Leyden Museum, Vol. XIII.

and distinctly crenulate along its whole length; the lower orbital margin of *Gelas. inversus*, however, is slightly concave in the middle and quite entire, except towards its external rounded angle, which appears somewhat crenulate. In both species the orbits present no trace of an accessory row of granules near the lower orbital margin.

The larger chelipede of the male is characteristic. The anterior margin of the arm is somewhat granulate in *Gelas. lacteus*, but in *Gelas. inversus* this margin is dilated distally in a longitudinal lamellate crest, which appears somewhat denticulate. The upper surface of the wrist is somewhat granulate, its inner margin finely denticulate, its outer surface nearly smooth. The larger hand has about the same form in both species, being three times as long as high, and the fingers being scarcely more than once and a half as long as the palm.

In *Gelas. inversus* the palm is a little longer than high, which is also the case in the other species. The upper border of the palm is slightly rounded in the Japanese species, but in *Gelas. inversus* this border is somewhat flattened, though also granulated, and separated externally from the outer surface of the palm by a longitudinal row of granules. The upper half of the outer surface of the palm is rather coarsely granulated, but in *Gelas. lacteus* this granulation is much finer: in both species the greater under half of the palm appears smooth for the naked eye, very finely granulate under a lens of sufficient power. The lower sharp margin of the palm is distinctly granulate in *Gelas. inversus*, but very finely so in the other species. The fingers are smooth for the naked eye, and present about the same form and length in both species. They are nowhere furrowed, neither in *Gelas. lacteus* nor in *Gelas. inversus*.

The granulation at the base of the dactylus is a little coarser in the species of Hoffmann than in the other. The mobile finger of *Gelas. inversus* is constantly

armed with a triangular prominent tooth at the distal extremity; in some specimens the granulated internal margin of this finger presents still a second smaller tooth a little beyond the middle, and a few somewhat prominent granules near the base, but in other specimens only the distal tooth of the dactylus exists. This distal tooth is not found in *Gelas. lacteus*. The dactylus is only slightly arcuate towards its extremity. The lower finger or index is nearly straight, scarcely directed upwards at the pointed extremity. The granulated and straight inner margin bears in *Gelas. inversus* only one single tooth, which lies immediately before the middle, and no teeth exist at the distal extremity; *Gelas. lacteus* presents also a small tooth a little before the middle, but the inner margin is somewhat arcuate immediately before the tip.

The inner surface of the palm is highly characteristic of this species. There is namely no trace of the more or less oblique granulated ridge, which in nearly all other species of this genus borders the under surface of the palm, proceeding in an oblique direction from the articulation of the wrist to the base of the index, but the internal surface of the palm is, on this place, simply rounded, smooth for the naked eye, very finely granulated when seen under a magnifying glass. In *Gelas. lacteus*, on the contrary, there is, like in most other species, a prominent oblique granulated crest, defining the under surface of the palm. *Gelas. inversus* presents, however, one single row of prominent granules near the articulation of the mobile finger, but this row exists also in *Gelas. lacteus*. For the rest the inner surface of the palm and of the fingers appears smooth for the naked eye in both species.

The ambulatory legs are slender, almost in the same degree as those of *Gelas. lacteus*: so e. g. the meropodites of the last pair of legs of the latter have a length of $7\frac{3}{4}$ mm. and a breadth of $2\frac{2}{5}$ mm., those of *Gelas. inversus*

respectively $7\frac{1}{4}$ mm. and $2\frac{1}{5}$ mm. The meropodites of the penultimate pair have a length of $8\frac{1}{3}$ mm., and a breadth of $3\frac{1}{4}$ mm. in *Gelas. inversus*, whereas these numbers are $10\frac{1}{3}$ mm. and $3\frac{3}{4}$ mm. in the Japanese species.

As will be seen when comparing my description with that of *Gelas. chlorophthalmus*, this species is quite distinct from *Gelas. inversus*.

Gelas. inversus Hoffmann has been collected on the shores of Mozambique and of the Island of Nossy-Faly.

21. *Gelasimus triangularis* A. M. E.
var. *variabilis* de Man.

(Pl. 4, fig. 13).

Gelasimus triangularis, A. Milne Edwards, in: Nouv. Archives du Muséum, T. IX, p. 275.

Gelasimus triangularis, de Man, in: Journal of the Linnean Soc. of London, Vol. XXII, 1888, p. 119, Pl. VIII, figs. 8—11.

The Leyden Museum contains about forty specimens (♂, ♀) which were collected at Amboina. These individuals present some slight differences from specimens of *Gelas. triangularis* from the Mergui Archipelago, which I have before me and which are to be considered as to represent the typical form of this species, having been compared with type-specimens of the Paris Museum by myself when writing my "Report on the Mergui Crustacea".

As to the cephalothorax, I observe that the inferior margin of the orbits is a little less finely crenulate, especially externally, than in the Mergui specimens, and that an accessory row of fifteen or sixteen small granules exists on the lower wall of the orbits near the inferior margin, both in the male and in the female, which are not found in the Mergui form. In the second place the teeth with which the inner margins of the fingers of the larger hand of the male are armed, are placed otherwise than those which are found on the hands of the Mergui specimens. These teeth, indeed, are placed

Notes from the Leyden Museum, Vol. XIII.

in the seven male individuals before me, on four different manners, and on this reason I named this variety »*variabilis*». In two specimens the lower finger bears two teeth which stand, on the proximal half of the margin, at a small distance from one another, the smaller tooth quite at the base, the second, which is slightly larger, immediately before the middle of the margin. The longer distal end presents fourteen or fifteen granules, the fifth of which (counting from the tip) is a little more prominent than the others. In these individuals the upper finger is armed, quite at the base, with two teeth which are smaller than the opposite teeth of the index, and with two or three prominent granules near the distal end.

In three other specimens the proximal smaller tooth of the two of the lower finger lies also quite at the base, but the other is found exactly in the middle of the margin. The upper finger presents several granules, like in the first variety, three or four of which are a little more prominent than the others. One specimen differs from the three last described ones only by the absence of the basal tooth of the lower finger, and in the last specimen, finally, the teeth are entirely absent on both fingers. In this specimen the row of granules at the inner surface of the palm near the base of the fingers is not developed, in the other ones it is also less distinct than in the Mergui specimens.

The ambulatory legs are a little more slender than those of the type-specimens, the meropodites as well as the other joints appearing a little less enlarged.

The upper surface of the cephalothorax has a reddish gray ground-colour, and is marked with a few transverse purplish stripes. The larger hand is uniformly yellowish.

The occurrence of this variety at Amboina is to a certain degree remarkable, as the typical form occurs in New Caledonia and in the Mergui Archipelago.

22. *Metopograpsus messor* Forskål,
var. *gracilipes* de Man.

(Pl. 4, fig. 14).

Metopograpsus messor, Forskål; de Man, in: Journal Linnean Society of London, Vol. XXII, 1888, p. 144, Pl. IX, fig. 11.

One young male from the Pacific Ocean was purchased from the Museum Godeffroy. This specimen agrees with the typical representatives of this species from the Red Sea, but the propodites of the ambulatory legs are a little more slender. I cannot decide whether this difference is individual or characteristic of those representatives of *Metop. messor*, which inhabit the Pacific Ocean, because I have only one single specimen before me. But when this slight difference might indeed prove to be proper to the specimens of the Pacific Ocean, then I propose to designate this form as a variety under the name of *gracilipes*. The front is also a little narrower than in the type.

Dimensions:

♂

Distance between the external orbital angles .	20	mm.
Length of the cephalothorax	15	»
Breadth of the front	12 ² / ₁₅	»

23. *Grapsus maculatus* Catesby.

Grapsus maculatus, Catesby; H. Milne Edwards, l. c. p. 167, Pl. VI, fig. 1.

This species is at present regarded to be one of the most widely distributed forms and to occur both in the Atlantic and in the Indopacific Regions. I must, however, remark that a young sterile female specimen from Djeddah, Red Sea, differs from female specimens of equal size from the West-Indies, which I have before me, by the postfrontal lobes, especially the internal ones, projecting somewhat less forward. The cephalothorax of this Djeddah specimen has a length of 33 mm.

Notes from the Leyden Museum, Vol. XIII.

The Leyden Museum contains also an adult male of this species, from the Gulf of California. This specimen, the cephalothorax of which has a length of 63 mm., fully agrees with the specimens from the Bahama Islands and the Antilles, but the coloration is somewhat different. The upper surface of the cephalothorax has, especially on the gastric and branchial regions, a violet colour and the pale spots are much less numerous, more distinctly defined and not confluent. The anterior legs as well as the ambulatory ones are of a bright red, more or less mixed with yellow, especially on the posterior legs, and the pale spots are here also few in number and not confluent.

24. *Sesarma Büttikoferi* de Man.

Sesarma Büttikoferi, de Man, in: Notes from the Leyden Museum, Vol. V, 1883, p. 163.

A male and a female from the Junk River, Liberia.

The male specimen is of a somewhat larger size than the original type-specimen described by me in 1883. As to the female, I observe that the hands are comparatively much smaller than those of the male. In the adult male the palm projects considerably outward beyond the carpus, and the fingers measure only a third of the whole length of the hand, the palm being twice as long as the fingers. In the female, however, the fingers are still a little longer than the palm and the latter is not at all produced outward beyond the carpus; but the outer surface of the hands is flattened as in the male, and the other characters are also nearly the same.

Measurements:	♂	♀
Distance between the external orbital angles.	15 $\frac{1}{3}$ mm.	11 $\frac{2}{3}$ mm.
Length of the cephalothorax . . .	12 $\frac{1}{5}$ »	9 $\frac{1}{3}$ »
Breadth of the upper margin of the front	9 $\frac{1}{3}$ »	7 »
Length of the hands	15 »	6 $\frac{1}{4}$ »

Notes from the Leyden Museum, Vol. XIII.

25. *Sesarma Germani* A. M. E.

Sesarma Germani, A. Milne Edwards, in: Nouv. Archives du Muséum, T. V, Bulletin, p. 28.

Sesarma Germani, de Man, in: Zoolog. Jahrb. herausgegeben von J. W. Spengel, Bd. II, 1887, p. 651.

This species is identical with *Sarmatium crassum* Dana; Milne Edwards informs me that he is of the same opinion. I was enabled to study a typical male specimen of *Ses. Germani* of the Paris Museum, and I cannot find any important difference between this form and Dana's species. Milne Edwards says that the antero-lateral margins present two teeth, including the external orbital angle: I observe, however, a small, though distinct, second emargination, so that the antero-lateral margins present three teeth. The second lobe is almost twice as long as the first, formed by the external orbital angle. These teeth or lobes are slightly rounded, and the third is very small and may easily be overlooked. The inferior margin of the front is slightly emarginate in the middle.

The internal angle of the carpopodite of the anterior legs is acute. This species, finally, at first sight may be recognized by the six or seven parallel, transverse and smooth, characteristic crests or ridges, with which the upper margin of the palm is ornamented.

It is to this species that I now refer, with some doubt however, a young female specimen from the Pacific Ocean because it presents some slight differences from the male. The antero-lateral margins present no trace of the second emargination behind the external orbital angles, and the transverse furrows on the upper margin of the palm, which are characteristic of the male, are only represented by a few transverse rows of impressed points.

Measurements of this specimen:

♀

Distance between the external orbital angles $8\frac{2}{5}$ mm.

Greatest width of the cephalothorax. . . . $11\frac{1}{4}$ »

Notes from the Leyden Museum, Vol. XIII.

Length of the cephalothorax	9 $\frac{1}{3}$ mm.
Breadth of the front	4 $\frac{1}{2}$ »

Dana's specimen was collected on the Samoa Islands, that of Milne Edwards on Pulo-Condore.

26. *Sesarma oceanica* de Man.

Sesarma oceanica, de Man, in: Zoolog. Jahrb. von J. W. Spengel, Bd. IV, Abth. f. System. 1889, p. 429, Taf. X, fig. 9.

A male specimen collected at Tjibodas, in the interior of the Island of Java, and two young females without eggs from an unknown locality.

The male is larger than those of my original description (see the measurements). The small tubercles at the lower margin of the front are wanting in this specimen. The upper margin of the mobile finger is till near the extremity covered with small acute teeth with horny tips.

This species is most closely allied to *Ses. dentifrons* A. M. E. from Upolu. Prof. Milne Edwards sent me an unpublished drawing of this species, and this drawing presents a so striking resemblance with my *Ses. oceanica* that I suppose the two species to be identical. After having sent, however, the male from Tjibodas to Prof. Milne Edwards, this learned carcinologist wrote me that he still considers *Ses. dentifrons* to be a distinct species, distinguished by the frontal margin being armed with four or six small tuberculiform teeth. Unfortunately the single original specimen of *Ses. dentifrons* does not make part of the Paris collection, having belonged to the Museum Godeffroy in Hamburg, and I do not know where it is at present. I have, however, described very small frontal tubercles in the type-specimens of *Ses. oceanica*, and as these specimens had only a third of the size of *Ses. dentifrons*, it is very probable that the frontal teeth were still too little developed. In the very young female specimen of the Leyden Museum they are already distinctly visible.

Notes from the Leyden Museum, Vol. XIII.

Dimensions of the male from Tjibodas:

	♂
Distance between the external orbital angles	18 $\frac{2}{3}$ mm.
Greatest width of the cephalothorax.	22 $\frac{1}{2}$ >
Breadth of the upper margin of the front	8 $\frac{3}{4}$ >
Length of the cephalothorax	21 $\frac{1}{2}$ >

Sesarma oceanica de Man has been found on the Islands of Ponapé and of Java.

27. *Heterograpsus crenulatus* Guérin.

Heterograpsus crenulatus, Guérin: H. Milne Edwards, in: Annales des Sciences Naturelles, T. XX, 1853, p. 193.

A male from New Zealand was presented in 1878 by Milne Edwards to the Leyden Museum under the name of *Heterograpsus barbimanus* Heller. As Miers and Filhol have, however, pointed out, this species is identical with *Heterogr. crenulatus* Guérin.

Heterogr. crenulatus is closely allied to *Heterogr. penicillatus* de Haan (confer de Man, in: Notes from the Leyden Museum, T. I, p. 71). The differences are the following: The cephalothorax of the Japanese species is broader anteriorly, the distance between the external orbital angles being greater in proportion to the length of the cephalothorax than in *Heterogr. crenulatus*. The front of *Heterogr. penicillatus* is exactly half as broad as the greatest width of the cephalothorax and comparatively broader than in the other species. The upper surface of the cephalothorax of *Heterogr. penicillatus* is nearly smooth and only minutely punctate, showing only a few granules on the postfrontal lobes, on the protogastric regions on each side of the shallow bifurcated frontal furrow, and a few also on the antero-lateral parts of the upper surface. This fine granulation is much more distinct in *Heterogr. crenulatus*, in which the greatest part of the upper surface is covered with granules, the cardiac region only being smooth.

Notes from the Leyden Museum, Vol. XIII.

The antero-lateral teeth present the same form and size in both species. The margins of these teeth, of the orbits and of the front are a little more coarsely granulated in *Heterogr. crenulatus* than in the other, and the posterior margin of the cephalothorax is a little broader than the anterior margin of the front, but in *Heterogr. penicillatus* the front is distinctly broader than the posterior margin.

The impressed line on the second joint of the external maxillipedes proceeds closer to the internal margin in the Japanese species than in the other, its distance from the internal margin being a fourth of the breadth of the joint in *Heterogr. penicillatus*, but two fifths of it in *Heterogr. crenulatus*, when measured in the middle of the joint. The external margin of the third joint appears more straight and less arcuate in *crenulatus* than in the other, and is also a little more distinctly emarginate at its posterior end than in *penicillatus*.

The carpopodite of the anterior legs of *Heterogr. penicillatus* is armed with an acute tooth at its inner angle, but only with a prominent granule in the other. The upper surface is a little more distinctly granulated and the antero-internal surface a little more hairy than in *Heterogr. penicillatus*.

The hands have quite the same form in both species; like the wrist they appear smooth for the naked eye, but the fine granulation which they present under a magnifying-glass, is somewhat more distinct in *Heterogr. crenulatus* than in the other. Nearly the whole inner surface of the palm and of the fingers of *Heterogr. crenulatus* is covered with hair, but these hairs do not occur on the outer side of the fingers. In *Heterogr. penicillatus*, on the contrary, the fingers are clothed at their bases with hair on the inner as well as on the outer surface, and the tuft of hair on the inner side occupies only a small part of the inner surface of the palm, extending neither to the upper nor to the under margin.

The ambulatory legs present about the same form in both species, but the meropodites of *Heterogr. penicillatus*

are armed at the distal end of the upper margin, with an acute tooth, which is not found in the other species. The ambulatory legs of *Heterogr. crenulatus* are very hairy, not only along the anterior margin of the meropodites, but also along the anterior and posterior margins of the following joints. The ambulatory legs of the Japanese species are described by de Haan as glabrous in the male. This is not quite exact. The meropodites are hairy along their anterior margin, but the following joints are clothed, especially along their margins, only with numerous small tufts of very short dark-coloured hairs, the long hairs of *Heterogr. crenulatus* are entirely wanting.

Heterogr. penicillatus is marked on the cephalothorax as well as on the legs with small round red spots.

This species inhabits Japan, and extends until Amoy and Hongkong, *Heterogr. crenulatus* inhabits the coasts of New Zealand.

I add the measurements of the two species:

	<i>penicillatus. crenulatus.</i>	
	♂	♂
Distance between the ext. orbit. angles	17 $\frac{1}{4}$ mm.	15 mm.
Greatest width of the cephalothorax.	20 $\frac{1}{2}$ »	19 $\frac{1}{2}$ »
Breadth of the anter. marg. of the front	9 $\frac{3}{4}$ »	7 $\frac{2}{3}$ »
Length of the cephalothorax . . .	17 $\frac{1}{2}$ »	17 »
Breadth of the posterior margin of		
the cephalothorax	8 $\frac{1}{4}$ »	8 »

These two species differ from *Heterogr. crassimanus* Dana from the Sandwich Islands, which may be identical with *Heterogr. maculatus* M. E., by the more hairy legs, especially by the hands which are clothed with hair at the base of the fingers.

Heterogr. nudus Dana from San Francisco is closely allied to, but may be distinguished from *Heterogr. penicillatus* by the almost glabrous ambulatory legs, which are less slender and the meropodites of which present no tooth at the distal end of their upper margin. It differs from *Heterogr. crenu-*

latus also by its almost glabrous ambulatory legs; the inner surface of the palm of the anterior legs of the male is almost entirely clothed with hair in *Heterogr. crenulatus*, whereas in *Heterogr. nudus* the base of the fingers only is hairy, as in *Heterogr. penicillatus*. The ambulatory legs, especially the dactylopodites, are likewise more slender in the species of Guérin, than in *Heterogr. nudus*, if Dana's figure is correct.

I must, finally, observe that Kingsley (Proc. Acad. Nat. Scienc. of Philadelphia, 1880, p. 208) is quite wrong in uniting *Heterogr. nudus* with *Heterogr. sanguineus* de Haan, for in this latter species the hands are quite naked, without a tuft of hair on the inner surface, the wrist of the anterior legs presents an acute tooth at the inner angle, and the meropodites of the ambulatory legs are armed with a sharp tooth at the distal end, whereas those of *Heterogr. nudus* appear to be unarmed.

Heterogr. maculatus M. E. may be identical with *Heterogr. sanguineus* de Haan. *Heterogr. crassimanus* Dana also may be identical with the species of the »Fauna japonica'', but the merus-joint of the outer foot-jaws appears more enlarged and more dilated externally, with a more convex outer margin in the species of Dana, and the penultimate joint of the abdomen in the male is shorter in proportion to its breadth. Moreover, in Dana's figure, the carpus of the anterior legs does not present the sharp tooth at the inner angle, which exists in *Heterogr. sanguineus*.

28. *Heterograpsus spinosus* M. E.

(Pl. 4, fig. 15).

Heterograpsus spinosus, H. Milne Edwards, in : Annales des Sciences Naturelles, T. XX, 1853, p. 194. — A. Milne Edwards, in : Journal des Museum Godeffroy, Heft IV, 1874, p. 6.

A young male and an ova-bearing female from Upolu. This rare species may be easily recognized by the characteristic shape of the cephalothorax. This latter is a little

Notes from the Leyden Museum, Vol. XIII.

broader than long, its upper surface is very slightly convex transversely as well as in the antero-posterior direction, especially in the female. The regions are tolerably well indicated and defined by distinct, though shallow grooves. The upper surface is minutely granulated anteriorly and on the mesobranchial regions, for the rest smooth and somewhat finely punctate. The front is strongly deflexed, and the anterior margin appears nearly straight; the epibranchial (or internal post-frontal) lobes are separated from one another by the rather deep median furrow, which is bifurcated as usual. The hepatic region is somewhat concave. The orbits are large. The antero-lateral margins, which in the other species of this genus appear more or less convex, are, on the contrary, slightly concave in *Heterogr. spinosus*; they are armed moreover behind the acute and prominent external orbital angle with three subequal, somewhat spiniform and comparatively small teeth; the first tooth, formed by the external orbital angle, is as long as the three posterior teeth together. The cephalothorax has therefore its greatest breadth at the fourth antero-lateral teeth. The postero-lateral margins are nearly straight and slightly converge backwards. The external maxillipedes leave a small rhomboidal gape between them, about as wide as those of *Heterogr. sanguineus* de Haan and several other species. Kingsley in his "Analytical key to the genera of Grapsidae" (Proc. Acad. Nat. Scienc. of Philadelphia, 1880, p. 188) divides the genera according to the presence or absence of the rhomboidal gape between the external foot-jaws, and refers the genus *Heterograpsus* to that section in which the outer foot-jaws are not gaping. He is evidently wrong in doing so, and it would perhaps have been better to have made no use at all of this character. The external foot-jaws of *Heterogr. oregonensis* Dana leave no hiatus between them, and Dana, for that reason, brought this species to another genus (*Pseudograpsus*) and referred those

with gaping maxillipedes to the genus *Hemigrapsus*. I am also inclined to refer these forms to different genera.

The inferior margin of the orbits of the male is entire and appears only very minutely granulated when seen under a strong magnifying-glass.

The carpopodite of the anterior legs is rounded and unarmed at the internal angle. The hands are quite smooth, but the slightly gaping fingers are provided with a patch of hair externally as well as internally.

The ambulatory legs are rather slender. The meropodites are armed with an acute tooth at the distal end of their upper margin. The propodites and dactylopodites of the male are tomentose along their inferior margin; the toment has its greatest development on the propodites and dactylopodites of the first pair, and gradually diminishes on those of the other legs.

This species, on account of its more strongly deflexed front and slightly concave antero-lateral margins, is quite different in appearance from its congeners.

I give the measurements of the two quoted individuals and of a male type-specimen from Australia of the Paris Museum.

	1.	2.	3.
	♂	♂	♀
	mm.	mm.	mm.
Distance between the ext. orbit. angles .	$13\frac{2}{3}$	$10\frac{1}{2}$	$12\frac{1}{3}$
Greatest breadth of the cephalothorax .	$15\frac{3}{4}$	$11\frac{1}{2}$	14
Length of the cephalothorax	$19\frac{1}{4}$	$10\frac{1}{3}$	$11\frac{2}{3}$
Breadth of the front	$7\frac{2}{5}$	$5\frac{4}{5}$	$6\frac{3}{4}$

Nº. 1 is the original specimen of the Paris Museum, Nº. 2 and 3 are the Leyden specimens.

Heterograpsus spinosus, a rare species, has been recorded from Vanicoro and Australia.

29. *Calcinus intermedius* de Man.

Calcinus intermedius, de Man, in: Notes from the Leyden Museum, Vol. III, 1881, p. 102.

Notes from the Leyden Museum, Vol. XIII.

I consider this species to be identical with *Calcinus latens* (Rand.) Dana, finding no difference of any importance between the original specimen of *intermedius* from Djeddah, Red Sea, and a specimen from Tahiti, which I formerly referred to Dana's species. The granules with which the fingers of the larger hand are covered, are more flattened and less prominent than in the Tahiti specimen, but this may perhaps be ascribed to the larger size of the Red Sea specimen, in which the granules are more worn off. This species may be distinguished both from *Calc. elegans* M. E. and *Calc. nitidus* Hell. by the quite different coloration, as well as by the lower margin of the left hand being sharp and granulate, and by the dactylopodites of the second and third pair of legs being more slender and almost as long, but not shorter than the propodites. The fingers of the larger hand are also but finely granulate and they are not provided with the larger tubercles which are characteristic of *Calc. elegans*.

This species may at first sight be recognized by the dark violet coloration of the basal half of the dactylopodites of the second and third pair of legs; these legs are clothed with some tufts of hair especially on the last joints.

Calcinus latens has been recorded by Richters from Mauritius, and by Dana from the Indian Archipelago, the Fiji- and the Sandwich Islands.

30. *Pseudosquilla oculata* Brullé.

Squilla oculata, Brullé, in: Webb et Berthelot, Iles Canaries, Zool. Crust. p. 18, fig. 3 (1836—44).

Pseudosquilla oculata, Miers, on the Squillidae, in: Annals and Magazine of Natural History for February 1880, p. 110, Pl. III, fig. 3 and 4.

The Leyden Museum received two specimens of this Atlantic species from the Samoa Islands.

Prof. Milne Edwards enabled me to compare them with a type-specimen of Brullé's *Squilla oculata* from the Cape Verd Islands, and I cannot find differences of any im-

Notes from the Leyden Museum, Vol. XIII.

portance between these specimens. I only observe that the eye-peduncles of the Samoa-specimens are a little more dilated at the distal end, and that the rostral plate is slightly more transverse and has the small median spinule comparatively a little longer than the specimen from the Cape Verd. The terminal joint of the antennular peduncle appears in the figure, published by Miers, to be about twice as long as the penultimate one; but in reality, in the Samoa-specimens, as well as in the Atlantic individual the terminal joint is only a little longer than the preceding one.

The larger specimen measures a little more than 5 centim. in length.

As we know, still another species of this genus appears as widely distributed, occurring both in the Pacific and Atlantic oceans, viz.: *Pseudosquilla ciliata* Miers, which I consider to be specifically distinct from *Pseudosquilla oculata* Brullé.

Middelburg, April 1890.

EXPLANATION OF THE PLATES.

PLATE 1.

- Fig. 1. *Actasodes pubescens* M. E., outer view of the hand of the young male, $\times 8$.
 • 2. *Etisodes frontalis* Dana, adult male, $\times 2$; 2a, larger hand of the male, $\times 2$.
 • 3. *Epixanthus subcorrosus*, n. sp., female, $\times 2$.

PLATE 2.

- 4. *Epixanthus frontalis* M. E., female from the Mergui Archipelago, $\times 2$.
 • 5. *Gelasimus vocans* M. E., larger hand of a male specimen from Atjeh, Sumatra, $\times 1\frac{1}{2}$; 5a, larger hand of the male from Samoa, which belongs to the variety *cultrimana* Ad. & White, $\times 1\frac{1}{2}$.
 • 6. *Gelasimus tetragonon* Herbst, adult male from the Samoa Islands, $\times 1\frac{1}{2}$.

PLATE 3.

- 7. *Gelasimus arcuatus* de Haan, type-specimen from the Leyden Museum, front of a male, $\times 4$; 7a, larger hand of a male, similar to that figured by de Haan, $\times 1\frac{1}{2}$; 7b, a variety of the larger hand of a type-specimen from the Leyden Museum, $\times 1\frac{1}{2}$.
 • 8. *Gelasimus coarctatus* M. E., front and orbit of a young male from Ponaïé; 8a, larger hand of the same individual, $\times 1\frac{1}{2}$.
 • 9. *Gelasimus forcipatus* (Ad. & White) de Man, outer view of the larger hand of a male from Celebes, $\times 1\frac{1}{2}$.
 • 10. *Gelasimus acutus* Stimpson, front and orbit of a male specimen from the Mergui Islands, $\times 3$.

PLATE 4.

- 11. *Gelasimus signatus* Hess, male from the eastern coast of Australia, $\times 1\frac{1}{2}$; 11a, front and orbit of the same, $\times 3$; 11b, outer view of the larger hand of the same individual, $\times 1\frac{1}{2}$; 11c, front of a male specimen from Batavia, belonging to the variety *angustifrons* de M., $\times 4$.
 • 12. *Gelasimus inversus* Hoffmann, outer view of the larger hand of a male type-specimen from Nossy-Paly, $\times 1\frac{1}{2}$.
 • 13. *Gelasimus triangularis* A. M. E., var. *variabilis* de Man, outer view of the larger hand of a male from Amboina, $\times 2$.
 • 14. *Metopograpsus messor* Forskål, var. *gracilipes* de Man, right leg of the penultimate pair of a male specimen from the Pacific Ocean, $\times 2$.
 • 15. *Heterograpsus spinosus* M. E., an ova-bearing female from Upolu, $\times 2$; 15a, outer view of the hand of the young male, $\times 4$.

NOTE II.

DESCRIPTION OF A NEW SPECIES OF FUSUS
FROM JAPAN.

BY

M. M. SCHEPMAN.

Fusus Sieboldi, n. sp.

Shell fusiform, white; whorls 8, slightly concave at the upper part, rather inflated and rounded beneath; nucleus smooth and semitransparent, each of the next whorls with about 10 costae, which become obsolete on the 6th and are entirely wanting on the ultimate and penultimate whorl. The entire surface of the shell, with exception of the nucleus, is covered with close set lines of growth and spiral lirae, of which latter there are 13 on the penultimate whorl, besides a few much finer intermediate ones, which alternate rather regularly with the coarser lirae and are more clearly seen on the ultimate whorl; the lirae are slightly granulate. Last whorl regularly contracted to the base and produced into a moderately long canal, which is slightly curved. Aperture oval, columella smooth, slightly excavated, with a thin white callosity; interior of the aperture smooth and white.

Length 40, diam. 16 mill. — Length of the aperture, including the canal, 24, width $7\frac{1}{2}$ mill.

Hab. Japan, collected by von Siebold (Leyden Museum).

Rhooen near Rotterdam, November 1890.

NOTE III.

CERCOPITHECUS WOLFI, N. SP.

BY

A. B. MEYER.

In the Zoological Garden of Dresden, since the year 1887, there has been a living specimen of a *Cercopithecus*, brought hither from Central West-Africa by Dr. Ludwig Wolf. This specimen so obviously represents an undescribed species of monkey, that I need not hesitate any longer in describing it shortly, though this can be done but imperfectly during its life-time. The following remarks, therefore, must be looked upon as preliminary only, to be completed after the animal's death.

This new species belongs to the *Mona*-group, which was divided by Prof. Schlegel (Cat. Mus. Pays-Bas, Singes, 1876, p. 80) into those with white over the root of the tail and those without it.

The first division is represented solely by *C. mona* Erxl.; the second is composed of *C. Campbelli* Wat., *C. pogonias* Benn. (*Erzlebenii* Dahlb. & Puch.), and *C. erythrogaster* Gray, all occurring in Western Africa. To this latter group *C. Wolfi* belongs, though it may at a glance be distinguished from all other species by its ferruginous hind legs and by the light patches on inside of thighs and arms. Hereby it would be sufficiently characterized, as this, as far as I am aware, does not occur in any known species. I give, however, as detailed a description as is possible while the animal is living.

Above bluish gray, on sides of body darker, middle of back shading into yellowish brown. Cap brownish gray. An upraised yellowish white semicircular frontlet reaching

Notes from the Leyden Museum, Vol. XIII.

to the ears, bordered in front by a narrower black one produced very narrowly over the ears, becoming broader on sides of neck and dissolving into the black of outside of arms. Front part of snout dull orange flesh colour. Nose and other naked parts of face blackish gray or bluish. Ear tufts of a dark orange colour. The long hairs of the cheeks citron yellow, vermiculated with brownish and produced into long yellowish white whiskers. Throat and breast yellowish white, the latter in the middle with an elongated pure white patch. A stripe along the sides of the body saffron yellow. Middle of belly lighter. Arms outside deep black, the hairs being more or less tipped with yellowish brown, inside yellowish white with an outer edging of saffron yellow. Legs outside orange ferruginous, most vivid on tibia, on upper thighs with darker tips to the hairs; inside lighter and on midst of upper thighs white (whether naked skin or hairs could not be decided). Tail above mousegray, distal third darker, more bluish gray, underneath whitish. Iris reddish brown.

Length of body	circa 50 cm.
» » tail	» 68 »
Height of body (hindlegs)	» 35 »

I name this beautiful species *Cercopithecus Wolffi*, in honour of its discoverer, whose early death, which took place in Africa the 26th of June 1889, the scientific world has to deplore. The decease of Dr. Wolf prevents me from ascertaining the exact locality, where this specimen was procured.

Royal Zoological Museum, Dresden,
December 15, 1890.

NOTE IV.

EINIGES ÜBER DIE MYOXIDAE ODER SCHLÄFER.

VON

Dr. C. L. REUVENS.

December 1890.

(Tafel 5).

Im Nachfolgenden habe ich mich bemüht, eine Uebersicht meiner Abhandlung „Die Myoxidae oder Schläfer. Ein Beitrag zur Osteologie und Systematik der Nagethiere, mit 5 Tafeln. Verlag von Trap, Leiden, 1890“ zu geben. Dass dieses Excerpt, denn mehr ist es nicht, in der Zeitschrift des Leidener Museums seinen Platz findet, ist mir deshalb sehr lieb, weil die ganze Abhandlung im hiesigen Museum ausgearbeitet ist.

Im System sind die Schläfer bei den Nagethieren untergebracht, wo sie das eine Mal zu den Eichhörnern, das andere Mal zu den Mäusen gerechnet werden. Waterhouse (Observations on the Rodentia. Charlesw. Mag. Nat. Hist. New Ser. Vol. III. p.p. 91, 184. 1839) spricht zum ersten Male von einer Familie der Myoxidae. Ihm folgt später Wagner (Gruppierung der Gattungen der Nager in natürlichen Familien. Wieg. Arch. f. Naturgesch. T. I. 1841), und Brandt, Lilljeborg und Alston beweisen durch ihre Untersuchungen, dass die Myoxidae mittels gut umschriebener Schädelmerkmale eine besondere Familie bilden. Da Alston's Eintheilung der Nagethiere als die gegenwärtig beste angenommen wird, so werden die Schläfer jetzt als besondere Familie zwischen die der Eichhörner und Mäuse gestellt.

Die Merkmale, auf welche sich diese Eintheilung basirt,

Notes from the Leyden Museum, Vol. XIII.

sind bis jetzt hauptsächlich osteologischer Natur. Wohl ist von den europäischen Schläfern, und nach F. Cuvier (Description des caractères propres aux genres Graphiure et Cercomys. Ann. du Musée d'Hist. Nat. T. I, p.p. 441—452. 1832) auch von *Graph. capensis* constatirt, dass ihnen der Blinddarm fehle; dies Merkmal wird wahrscheinlich auch wohl bei den übrigen Repräsentanten der Familie vorkommen und würde diese letzte hierdurch allein schon scharf von den übrigen Nagern, so weit sich nämlich die Untersuchungen hierüber bis jetzt ausstrecken, abgegrenzt sein.

Beschreibt F. Cuvier im Jahre 1821 die Zähne von *M. glis* und im Jahre 1832 ausführlich die Schädelmerkmale von *Graph. capensis*, so giebt G. Cuvier in seiner Arbeit über die fossilen Skeletreste (1821—24) schon die Unterschiede im Gebiss bei *M. glis*, *E. quercinus* und *Musc. avellanarius* an. Waterhouse macht in seiner vorher erwähnten Arbeit aufmerksam auf das Fehlen des Processus postorbitalis und auf das grössere Foramen infraorbitale, Merkmale, wodurch *Myoxus* von *Sciurus* gut zu unterscheiden sei. Sich auf Differenzen am Schädel, hauptsächlich den Zähnen, basirend, bestimmt Wagner in 1841, dass die Familie der *Myoxina*, wie er die Schläfer nennt, ein Genus *Myoxus* und vier Subgenera, nämlich *Graphiurus*, *Eliomys*, *Glis* und *Muscardinus* besitze (statt *Glis* hat sich später *Myoxus* auch als Untergattungsname eingebürgert). War bis jetzt nur ein Vertreter jedes Subgenus bekannt, so fügt Wagner diesmal einen neuen, *E. melanurus* dazu, und im Jahre 1848 einen zweiten: *E. orobinus*. Mit dem Schädel unbekannt, wusste Wagner nicht, wo er den *M. nitedula* unterbringen sollte; bis heute ist diese Art von allen Autoren, mit Ausnahme von Trouessart (Catalogue des Mammifères. 1887) und Jentink (Catalogue du Museum d'Hist. Nat. des Pays-Bas. T. IX, XII.) welche sie zu *Eliomys* rechnen, zu *M. glis* gesetzt. Meiner Meinung nach kann sie diesen Platz behalten, doch könnte sie als Uebergang von *Myoxus* zu *Eliomys* betrachtet werden.

Osteologische Merkmale über seinen *M. elegans* giebt

Notes from the Leyden Museum, Vol. XIII.

Temminck in seiner Beschreibung vom Jahre 1851 nicht und sagt er auch nicht ob er *Myoxus* als Allgemeinnamen zur Andeutung der Verwandtschaft oder als Beziehung zum Genus oder Subgenus nimmt.

War seit dem Jahre 1820 schon eine Schläferart aus Afrika bekannt, welcher Desmarest den Namen *M. murinus* giebt, erst im Jahre 1852 beschreibt Peters (Reise nach Mossambique) den Schädel dieser Species und stellt sie zu *Eliomys*. Asien und Europa lieferten bis heute keine neuen Schläferarten mehr, Afrika jedoch bot ein fruchtbareres Jagdgebiet, und danken wir diesem Continent seit dem Jahre 1883 fünf neue Schläfer, nämlich: *Graphiurus hueti* aus Senegambien (de Rochebrune, Faune de la Sénégambie. 1883), *Bifa lerotina* aus Algier (Lataste, Description d'un nouveau rongeur de la Famille des Myoxides. 1885), *Eliomys nagtglasii* und *crassicaudatus* aus Liberia (Jentink, Zoological Researches in Liberia. 1887), und *Eliomys kelleni* aus Damara-land (Reuvens, Die Myoxidae oder Schläfer. 1890). Im Ganzen sind also 13 Species, vertheilt in 4 Subgenera zu einem Genus gehörend, bekannt:

<i>Eliomys</i>	<i>quercinus</i>	(L.).
»	<i>nagtglasii</i>	(Jent.).
»	<i>kelleni</i>	Reuv.
»	<i>crassicaudatus</i>	(Jent.).
»	<i>murinus</i>	(Desm.).
»	<i>melanurus</i>	Wagn.
»	<i>orobinus</i>	Wagn.
<i>Graphiurus</i>	<i>capensis</i>	Cuv.
»	<i>hueti</i>	Roch.
<i>Myoxus</i>	<i>nitedula</i>	Pall.
»	<i>glis</i>	(L.).
»	<i>elegans</i>	Temm.
<i>Muscardinus</i>	<i>avellanarius</i>	(L.).

Von diesen sind *E. orobinus* und *Graph. hueti* mir nur nach der Beschreibung bekannt, von allen anderen habe ich entweder die Typen oder doch mehrere Repräsentanten gesehen. Da ich hier natürlich, des beschränkten Raumes

wegen, nicht weit ausschweifen kann, so verweise ich für die allgemeinen Charactere, sowohl äusserliche als osteologische, nach meiner oben citirten Monographie, doch habe ich hier von *E. kelleni* eine Abbildung (Taf. 5) beigelegt und findet man am Ende dieser Abhandlung eine kurze Beschreibung dieser Art. Bei dieser Arbeit kommt es mir hauptsächlich darauf an, die geographische Verbreitung anzugeben. Deshalb folgt hier ein Verzeichniss aller von mir gesehenen Individuen, geordnet nach den Museen in denen sie sich befinden, und mit Angabe ihrer Fundorte; man hat dann sogleich ein Uebersicht des Materials.

Berlin.

Da ich selbst nicht in Berlin war, stand mir nur eine Liste der anwesenden Exemplare zur Verfügung; es zeigt sich daraus folgende Anzahl:

<i>E. quercinus</i>	(L.) 6 (2 Spir., 2 Ausg., 1 Sk., 1 Sch.) ¹).
<i>E. nagtglasii</i>	(Jent.) 1 (Ausg.).
<i>E. murinus</i>	(Desm.) 6 (1 Spir., 2 Ausg., 1 Sk., 2 Sch.).
<i>E. melanurus</i>	Wagn. 1 (Ausg.).
<i>Gr. capensis</i>	Cuv. 1 (Ausg.).
<i>M. nitedula</i>	Pall. 3 (1 Spir., 1 Ausg., 1 Sch.).
<i>M. glis</i>	(L.) 4 (2 Ausg., 1 Sk., 1 Sch.).
<i>M. elegans</i>	Temm. 2 (1 Spir., 1 Sch.).
<i>Musc. avellanarius</i>	(L.) 4 (1 Spir., 1 Ausg., 1 Sk., 1 Sch.).

Braunschweig.

E. quercinus (L.) 12 (6 Spir., 3 Ausg., 3 Sch.)²). Von diesen kommen 5 aus dem Harz, 1 vom St. Gotthardt, 1 von Chamouny; 5 sind ohne Ortsangabe.

M. nitedula Pall. 14 (7 Ausg., 7 Sch.). Es stammen 2 Ex. von der Wolga (H. Möschler), 2 aus Sarepta, 2 aus der Dobrudscha, 1 vom Altaï; die Schädel gehören zu den Bälgen.

M. glis (L.) 19 (8 Spir., 7 Ausg., 2 Sk., 2 Sch.). 10 Exemplare aus der Nähe von Braunschweig, 4 aus Auder-

1) Spir. = auf Spiritus, Ausg. = Balg oder ausgestopft, Sk. = Skelet, Sch. = Schädel.

2) Die 3 Schädel sind leider in meiner Abhandlung anzugeben vergessen.

matt (N. Donazian), 1 aus der Lombardei; 4 sind ohne Ortsangabe.

Musc. avellanarius (L.) 11 (8 Spir., 2 Ausg., 1 Sch.). Von diesen kommen 3 aus der Lombardei, 3 aus der Nähe von Braunschweig, 1 von Chamouny, 1 aus der Schweiz (H. Möschler); 3 ohne Fundort.

Darmstadt.

E. quercinus (L.) 1 (Ausg.). Ortsangabe: Deutschland.

M. glis (L.) 4 (Ausg.). Von diesen kommt einer aus Hessen und 2 aus der Nähe von Darmstadt; 2 haben als Localitätsangabe »Deutschland.«

Dresden.

E. quercinus (L.) 6 (2 Spir., 4 Ausg.). Von diesen stammen 4 aus Sachsen; 2 ohne Ortsangabe.

M. glis (L.) 8 (6 Ausg., 1 Sk., 1 Sch.). Nur eines hat eine bestimmte Angabe des Fundortes, nämlich Hohenleipa in Böhmen.

Musc. avellanarius (L.) 1 (Spir.). Ohne Ortsangabe.

Erlangen.

E. quercinus (L.) 1 (Ausg.). Aus der Nähe von Erlangen.

M. nitedula Pall. 1 (Ausg.). Ohne Ortsangabe. Ist sehr wahrscheinlich der Typus von *M. dryas* Schreb.

M. glis (L.) 3 (Ausg.). Aus der Nähe von Erlangen.

Musc. avellanarius (L.) 6 (3 Ausg., 3 Sch.). Drei sind aus der Nähe von Erlangen, die übrigen haben keine Ortsangabe.

Frankfurt.

E. quercinus (L.) 4 (3 Ausg., 1 Sk.). Alle aus der Nähe von Frankfurt.

E. murinus (Desm.) 3 (2 Ausg., 1 Sch.). Von diesen hat das Exemplar wozu der Schädel gehört, folgende Beischrift: »S. Afrika. Von H. Verreaux ertauscht in 1837. Typus »von *M. cineraceus* Rüpp.«; das andere kommt vom Cap (Dr. Friedleben, 1848).

M. glis (L.) 2 (Ausg.). Das eine aus dem Odenwald, das andere aus der Schweiz (Comersee).

Musc. avellanarius (L.) 3 (Ausg.). Alle aus dem Taunus. Leiden.

E. quercinus (L.) 11 (2 Spir., 6 Ausg., 3 Sch.). Von diesen stammen 2 aus Deutschland (Heidelberg), 2 aus Frankreich (Champagne), 1 vom St. Gotthardt (aus den Sammlungen von Blasius), 1 aus Rusland (von Brandt), 1 aus Süd Europa, die übrigen haben die Angabe »Europa''.

E. nagtglasii (Jent.) 7 (4 Spir., 2 Ausg., 1 Sch.). Von diesen kommen 2 von der Goldküste (von Nagtglas gesammelt), und hierzu gehört auch der Schädel; 3 kommen aus Liberia (Hill-Town am Du Queah River, Farmington River; gesammelt von Büttikofer und Stampfli). Obengenannte Exemplare haben Dr. Jentink zur Beschreibung der Art gedient, sind also die Typen. In 1888 ist noch ein Exemplar von der Goldküste stammend, dazu gekommen.

E. kelleni Reuv. 1 (Spir.). Dies Exemplar, der Typus der Art, hat v. d. Kellen in S. W. Afrika (Damara-land) gesammelt.

E. crassicaudatus (Jent.) 1 (Spir.). Von Büttikofer in Liberia (Hill-Town am Du Queah River) gesammelt; Typus der Art.

E. murinus (Desm.) 6 (3 Ausg., 1 Sk., 2 Sch.). Ein Exemplar (wozu einer der Schädel gehört) ist von Pel an der Goldküste (Dabocrom) gesammelt, und von Temminck in »Esquisses Zoologiques'' beschrieben; ein Exemplar ist von Brehm in S. Afrika (Algoa-Bai) gesammelt, 2 andere stammen vom Cap, und das letzte ist von Peters' Reise in Mossambique (Tette).

Graph. capensis Cuv. 3 (2 Ausg., 1 Sch.). Diese stammen alle vom Cap; das eine der ausgestopften Exemplare (wozu der Schädel gehört) ist von v. Horstock mitgebracht.

M. nitedula Pall. 2 (1 Ausg., 1 Sch.). Das eine Exemplar stammt vom Caucasus, das andere ist ohne Ortsangabe.

M. glis (L.) 6 (1 Spir., 3 Ausg., 1 Sk., 1 Sch.). Von diesen kommt 1 aus Livorno (von Cantraine gesammelt),

Notes from the Leyden Museum, Vol. XIII.

1 aus Croatien (aus den Sammlungen von Blasius), 1 hat die Angabe »Europa'', 1 (wozu der Schädel gehört) ist ohne Andeutung des Fundortes, das Skelet (erst seit kurzem im Museum) stammt aus Böhmen.

M. elegans Temm. 5 (3 Ausg., 2 Sch.). Diese Exemplare, die Typen der Art, sind von Bürger in Japan gesammelt und von Temminck in der »Fauna Japonica'' beschrieben.

Musc. avellanarius (L.) 10 (1 Spir., 5 Ausg., 1 Sk., 3 Sch.). Von diesen kommt 1 aus Sachsen, 1 aus Böhmen; 4 kommen aus Ungarn; 2 haben die Angabe »Europa, Deutschland'', 1 Exempl. ist von Blasius bei Rome (Tivoli) gesammelt und 1 ist ohne Angabe des Fundortes.

London.

E. quercinus (L.) 17 (5 Spir., 7 Ausg., 2 Sk., 3 Sch.). Von diesen kommen 3 aus S. Deutschland (Dr. Günther), 2 aus Frankreich (Dr. Gray und Danford), 1 aus der Schweiz (Alston), 1 aus der Nähe von Lissabon (Friend) und 4 aus S. Europa; 3 sind von Fraser in N. Afrika (Tangiers und Karouana) gesammelt, und bei 3 ist der Fundort nicht angegeben.

E. nagtglasii (Jent.) 6 (4 Spir., 2 Sch.). Alle in W. Afrika (Aschanti) gesammelt.

E. crassicaudatus (Jent.) 1 (Spir.). Von Burton in Fernando Po gesammelt.

E. murinus (Desm.) 10 (3 Spir., 6 Ausg., 1 Sch.). Von diesen stammt 1 vom Kilima-ndjaro (Jackson), 1 von Zanzibar (Dr. Kirk); 2 kommen von Port-Natal, 3 sind von Gurney, Rock und Smith in S. Afrika gesammelt; 1 stammt aus dem Piriwalde (Lt Trevelyan), 1 vom Senegal und 1 ist ohne Angabe des Fundortes.

Graph. capensis Cuv. 3 (2 Ausg., 1 Sk.). Alle drei sind in S. Afrika gesammelt; einer der Bälge ist der Typus von *M. elegans* Og.

M. nitedula Pall. 5 (2 Spir., 3 Ausg.). Von diesen sind 2 aus der Nähe von Belgrad (Coll. Robson), 1 stammt aus Georgien (gesammelt von Mlokosievitsch), 1 aus O. Persien (gesammelt von Blanford und Typus seines *M. pictus*),

Notes from the Leyden Museum, Vol. XIII.

1 aus Central Klein-Asien (Issa Fakyr) von Danford's Reise.

M. glis (L.) 12 (3 Spir., 6 Ausg., 3 Sch.). Von diesen kommen 7 Exemplare aus Frankreich, 1 aus der Schweiz, 3 aus Italien (Begato, in der Nähe von Genua), 1 ist ohne Ortsangabe.

M. elegans Temm. 2 (Spir.). Beide Exemplare sind von Pryer in Japan (Fuysan) gesammelt; nach einem (♂. 1880^{20/3}, N^o. 28) hat O. Thomas seinen *M. lasiotis* bestimmt.

Musc. avellanarius (L.) 11 (5 Ausg., 1 Sk., 5 Sch.). Von diesen kommen 2 aus England, 2 aus Frankreich, 1 ist ohne Ortsangabe.

Mainz.

E. quercinus (L.) 1 (Ausg.). Fundort: Deutschland.

M. glis (L.) 3 (Ausg.). Fundort: Deutschland.

Musc. avellanarius (L.) 3 (Ausg.). Fundort: N. Europa.

München.

E. quercinus (L.) 5 (2 Ausg., 1 Sk., 2 Sch.). Von diesen kommt 1 aus Baiern, 1 aus der Schweiz, 1, wozu einer der Schädel, aus Portugal (von Dr. Erdl als »var. *lusitanica*'' bezeichnet), 1 hat keine Angabe des Fundortes.

E. murinus (Desm.) 4 (2 Ausg., 2 Sch.). Alle 4 stammen aus S. Afrika.

E. melanurus Wagn. 3 (2 Ausg., 1 Sch.). Diese typischen Exemplare sind von v. Schubert auf dem Sinai gesammelt.

M. nitedula Pall. 2 (1 Ausg., 1 Sk.). Das eine Exemplar stammt aus Georgien, das andere aus dem Caucasus (Coll. Hohenacker).

M. glis (L.) 13 (9 Ausg., 1 Sk., 3 Sch.). Von diesen kommen 6 aus Baiern (Franken, Eichstädt), 1 aus der Schweiz, 1 hat die Angabe »Deutschland'', die übrigen sind ohne Angabe.

Musc. avellanarius (L.) 6 (4 Ausg., 2 Sch.). Nur bei einem Exemplare ist der Fundort, Franken, angegeben.

Paris.

E. quercinus (L.) 19 (8 Ausg., 3 Sk., 8 Sch.). Fünf dieser stammen aus Frankreich, 3 aus Algerien (unter diesen ist

der Typus von *E. mumbyanus* Pomel); die übrigen haben keine Angabe des Fundortes.

E. murinus (Desm.) 11 (8 Ausg., 3 Sch.). Von diesen Exemplaren stammen 5 vom Senegal, unter welchen der Typus von *M. coupei* Cuv. sammt dessen Schädel (mit Beischrift »crâne de l'individu dans »Mammifères"), während die anderen von Delcombre, Kiener und Prevost gesammelt sind; 4 Exemplaren stammen vom Cap, nämlich die beiden Typen von Desmarest und 2 andere, welche Verreaux in 1837 gesammelt hat und die übrigen 2 sind von Raffray und Schimba von der Ostküste Afrika's mitgebracht.

Graph. capensis Cuv. 1 (Sch.). Dieser Schädel ist von F. Cuvier abgebildet und beschrieben in »Annales du Musée d'Hist. Nat. T. I, pp. 441—452, Tab. 16, 17."

M. nitedula Pall. 3 (Ausg.). Diese 3 Exemplare (♂, ♀, juv.) sind von Tyzenhauz in Lithauen gesammelt. (Sehe seine Beschreibung und Abbildung in »Revue et Magasin de Zoologie, T. II, pp. 359—369").

M. glis (L.) 14 (11 Ausg., 1 Sk., 2 Sch.). Von diesen kommen 7 aus Frankreich (Doubs, Dyon, Lorraine), 3 aus den Pyrenäen, 1 aus Algerien; die übrigen haben keine Angabe des Fundortes.

M. elegans (Temm.) 1 (Ausg.). Dieses Exemplar stammt aus Japan und ist im Jahre 1844 von Temminck aus Leiden als Tausch-exemplar nach Paris abgegeben.

Musc. avellanarius (L.) 8 (7 Ausg., 1 Sk.). Von diesen kommen 3 aus Frankreich, 1 aus Savoien, 2 aus Italien, 1 von Sicilien; 1 hat keine Ortsangabe.

Stuttgart.

E. quercinus (L.) 12 (3 Spir., 5 Ausg., 4 Sch.). Alle diese Exemplare stammen aus Württemberg (Schramberg, Ratzenried, Tuttlingen, Mossingen, Hirschau, Urspring).

E. nagtglasii (Jent.) 1 (Spir.). Stammt von der Goldküste (Aburi).

E. murinus (Desm.) 5 (3 Ausg., 1 Sk., 1 Sch.). Von diesen stammen 1 vom Senegal, 1 aus Sierra Leone, 3 aus Natal.

M. nitedula Pall. 3 (1 Ausg., 1 Sk., 1 Sch.). Von v. Heuglin in Klein-Asien gesammelt.

M. glis (L.) 38 (7 Spir., 17 Ausg., 3 Sk., 11 Sch.). Alle in Württemberg (Steinheim, Stuttgart, Hohlenstein, Metzingen, Warthausen, Auendorf, Arthshofen, Leonberg) gesammelt.

Musc. avellanarius (L.) 9 (Spir.). Von diesen stammt 1 aus England, die übrigen kommen alle aus Württemberg (Altenstadt, Dietenheim, Zwiefalten, Steinheim, Blaubeuren).

Eliomys kelleni Reuvs.

Beschreibung des typischen Exemplares, eines erwachsenen Weibchens.

Taf. 5.

Aeusserer Charactere.

Dichter, weicher Pelz. Die Haare sind sowohl auf der Ober- als auf der Unterseite des Körpers auf ihrer Basis- hälfte dunkelgrau. Auf der Oberseite jedoch haben sie nach der Spitze hin einen bräunlich weissen Ring, während die Spitze selbst dunkelbraun ist. Dies giebt dem Thiere ein eigenthümliches, mäusefarbiges Ansehen. Auf der Unterseite und den Wangen bis zum Ohre ist die Spitze jedes Haares weiss. Die Schnauze ist heller als der Hinterkopf. Von den Bartborsten ab bis zum Auge und um dasselbe herum zieht sich ein dunkler Streif. Das Ohr ist breit, abgerundet und deutlich aus dem Pelze hervortretend; es ist von aussen ganz und von innen auf der Endhälfte mit feinen, dunklen, am Rande weiss-spitzigen Härchen besetzt. Der Schwanz ist auf dem ersten Drittel sehr kurz behaart, nach dem Ende hin jedoch allmählig länger; die Unterseite ist abgeplattet und in der Mitte viel kürzer behaart als auf den Seiten, die Behaarung ist daher etwas zweizeilig. Die Haare des Schwanzes sind an dessen Basis bräunlich grau mit weisser Spitze; das Weiss nimmt nach hinten mehr und mehr zu, so dass der Schwanz ein weisses Ende hat; die Unterseite ist heller als die Oberseite. Die Füsse sind weiss.

Notes from the Leyden Museum, Vol. XIII.

Körpermaasse:

Länge von der Nase bis zur Schwanzbasis . .	64 mm.
» des Schwanzkörpers	67 »
» der Haare am Schwanzende	19 »
» des Hinterfusses mit Nagel des Mittelfingers	15.4 »
» des Ohres auf der Innenseite	11 »
» der Bartborsten	23 »

Diese Maasse sind mit dem Zirkel nach den typischen Exemplare (in Spiritus) genommen.

Osteologische Charactere.

Ueber den Schädel, der aus dem Spiritus-exemplare heraus präparirt ist, ist Folgendes zu bemerken. Die Nasenbeine reichen ein gutes Stück über den Processus zygomaticus hinaus. Die Aeste des Processus, von welchen der obere sich unter einem schiefen Winkel an den Oberkiefer anschliesst, sind kurz und schmal; das zwischen ihnen liegende Foramen infraorbitale ist schmal, fast doppelt so hoch als breit und in der Mitte am breitesten. Der untere Ast liegt mehr nach hinten als der obere, und ist viel dicker, etwas dreieckig im Durchschnitte. Der Gaumenbogen reicht ein wenig über die Mitte des letzten Backenzahnes hinaus. Der absteigende Ast des Unterkiefers hat kein Foramen.

So weit dies von aussen her zu sehen ist, zeigt sich dass die Alveolen der oberen Schneidezähne bis zum unteren Aste des Processus zygomaticus sich erstrecken; im Unterkiefer laufen sie bis zur Basis des Gelenkfortsatzes. Die Kronen der Backenzähne, welche auch nicht die geringste Abnutzung zeigen, haben einen, an allen Seiten erhöhten Rand, doch sind Aussen- und Innenrand höher als Vorder- und Hinterrand. Die Backenzahnreihe des Oberkiefers bleibt ein wenig hinter dem Processus zygomaticus zurück.

Oberkiefer. Der Prämolare, der kleinste, ist stark von vorn nach hinten zusammengedrückt und von aussen und vorn nach innen und hinten gerichtet; die beiden ersten Molare sind viereckig, jedoch von innen etwas kürzer als von aussen, der dritte Molar ist deutlich trapezförmig.

Alle vier Backenzähne zeigen auf der Aussenseite, in der Mitte, eine sehr deutliche Einsenkung, wodurch zwei Höcker entstehen; die drei Molare haben nach vorn noch eine zweite, sehr schwache Einsenkung. Die Kauflächen zeigen beim Prämolare zwei, von den Höckern nach der Innenseite durchgehende Querleisten; bei den drei Molaren ebenfalls zwei solche, zwischen welche sich beim ersten eine, beim zweiten und dritten zwei kürzere von aussen her einschieben.

Unterkiefer. Der Prämolare ist dreieckig mit nach vorn gerichteter Spitze; die drei Molare sind viereckig. Nur der letzte Molare zeigt auf der Aussenseite eine deutliche Einsenkung. Der Prämolare hat eine durchgehende, und nach vorn noch die Spur einer sehr undeutlichen Querleiste. Die drei Molare haben je zwei durchgehende Querleisten.

Von den Alveolen der Backenzähne ist noch nichts mit zu theilen.

Schädelmaasse:

Foramen occipitale bis Nasenbein.	15	mM.
Nasenbeine	8.8	»
Backenzähne bis Nagezähne.	5	»
Obere Backenzahnreihe	3.1	»
Untere » 	3	»
Foramen occipitale bis Nagezähne.	17.8	»
Grösste Breite bei den Jochbogen.	12.4	»

Verbreitung. Diese Art ist bis jetzt nur aus Süd West Afrika (Damara-land) bekannt.

NOTE V.

DESCRIPTIONS OF EARTHWORMS.

BY

Dr. R. HORST.

VI.

On *Anteus gigas* Perrier.

(Plate 6).

Last year our Museum received a very large earthworm, collected in Brazil by Mr. H. du Dréneuf. I believe the specimen must be identified with *Anteus gigas*, though it does not agree in all its characters with the description given by Perrier of this species¹⁾. This description was based upon two specimens, one from Cayenne, the other from an unknown locality. Although our worm is not in a very good state of preservation, so that some interesting points of its organisation remained unknown to me, my examination has enabled me to add something to our rather scanty knowledge of this species, and to come to a certain conclusion about the question of its supposed identity with *Microchaeta rappi*.

Vaillant²⁾ pointed out that, according to Perrier's description, *Anteus gigas* agrees in many respects, i. e. the arrangement of the setae, the indistinctness of the clitellum, the thick anterior septa, the shape of the nephridia,

1) Nouv. Archives du Muséum d'hist. natur. de Paris, T. VIII, 1872, p. 49, pl. 1, fig. 13 and 14.

2) Suites à Buffon, Annelés, 1889 (quoted after Benham).

with *Microchaeta rappi* from the Cape, afterwards described by Beddard ¹⁾ and Benham ²⁾. Though Benham seems to be disposed to join Vaillant's suggestion, he has ranged in his Classification of Earthworms ³⁾ the genus *Anteus* among the Lumbricidae incertae sedis and concludes his description of this worm with the remark: "it would be exceedingly interesting to investigate more fully the anatomy of *Anteus*, for its locality, Cayenne, is so far removed from the home of *Microchaeta* in South Africa, that it seems scarcely credible that the two are identical."

Our specimen is broken up in two pieces, measuring together 86 cm.; the number of its segments amounts to about 425. Its colour is bluish green, darker at the dorsal side, with a brownish tint on the clitellum. The prostomium is a quadrangular lobe, not embedded in the buccal segment. The two anterior segments are narrow, whilst the eight succeeding ones have about a double longitudinal diameter.

The clitellum commences with the 14th or 15th segment and extends over nineteen segments. Segment 15—28 have a glandular appearance and are separated by obvious intersegmental grooves; on segment 22—27 the edges of the ventral side are thickened and surround a shallow area. Perrier in his specimens observed an obvious glandular modification on the segments 13—29, though he found in segment 8 the epidermis already somewhat thickened and modified; in segment 18—29 there was a projecting ridge on each side of the ventral surface.

The setae (fig. 2) are arranged in four couples; on the 13th segment those of the ventral couples (1 and 2) become separated from each other, and in the middle of the clitellum the distance between them is half as great as the distance between the internal ventral setae of both

1) Transactions of the Zoological Society, Vol. XII, 1886, pl. XIV and XV.

2) Quarterly Journal of Microsc. Science, Vol. XXVI, p. 267, pl. XV, XVI and XVI bis.

3) loc. cit. Vol. XXXI, p. 265.

sides (1 and 1). In the segments behind the clitellum the setae of each ventral couple become a little closer to each other, whilst the median distance between the internal ventral bristles is somewhat greater. The distance between a ventral and dorsal couple measures about thrice the distance between 1 and 2; the setae of the dorsal couple are placed somewhat closer to one another than those of the ventral couple. In most of the segments of the clitellum and in those in front of it dorsal bristles could not be recognized; in the four anterior segments the ventral setae were also invisible. The setae are not very long, 0.80 mm.; they have the ordinary shape, but are ornamented near their distal ends with several rows of crescent-shaped ridges (fig. 4, a). These ridges are much more marked in the clitellar setae (fig. 4, b), which are very different in shape and length from the ordinary setae; they are twice and a half as long as the latter (2 mm.) and only slightly curved, want the usual thickened region in the middle, and have their distal end of a lanceolate shape. It may be observed that in the other giant earthworm of Brazil, *Geoscolex maximus* Leuck.¹⁾ (*Titanus brasiliensis* Perr.)²⁾, the setae in the posterior segments have also a tendency to separate. However, my observations about *Anteus gigas* are not quite in accordance with Perrier's description. According to this author the setae are arranged like in the common earthworm, in four series of pairs, two of them situated quite ventrally, the two others dorsally, the series are constantly parallel to each other from the anterior to the

1) Zoologische Bruchstücke, Heft II, 1841, p. 104, pl. V.

2) loc. cit. p. 57, pl. 1, fig. 15 and 16.

Rosa, sul *Geoscolex maximus* Leuck., Bollett. dei Musei di Zoologia di Torino, N°. 40, 1888. Perrier afterwards described in his paper on *Pontodrilus* (Archiv. de Zoologie expériment. Vol. IX, 1881, p. 217 and 235) an other species: *Tit. forguessii*; it appears however somewhat dubious to me if this species really belongs to the same genus, because it differs from *Tit. brasiliensis* by having the setae in four series of pairs, by its male pores opening on segment XVII and by the situation of the nephridiopores in front of the dorsal setae.

Notes from the Leyden Museum, Vol. XIII.

posterior end of the body, and the bristles of each pair are placed close to each other. Though this difference between my description and that of Perrier may perhaps do arise some doubt about the identity of our specimen with *A. gigas*, I believe our observations agree with one another in so many points to give sufficient grounds for my assertion.

The nephridiopores are very large and apparent in the segments of the clitellum and the posterior region of the body; they are situated in front of the external dorsal setae, the first of them in the intersegmental groove of segment 3 and 4. Dorsal pores are absent. Like Perrier I have not been able to find the orifices of the genital organs.

On opening the worm (fig. 1) we are struck by the immense development of the anterior septa; the 5th to 10th septum are very thick, overlapping one another and hiding totally the intestine and other organs. In the two anterior septa the central portion is carried far backward and has another structure and colour than its peripheral portion; it is of a pale brown colour and appears to be covered with a layer of short prismatical bodies of a fine granular structure, standing vertically on the surface of the septum. In the following septa the central modification spreads out peripherically and reaches the periphery in the ninth septum, giving to it the singular appearance over its whole surface. The tenth septum is not so thick as those in front of it. All these septa are fixed to each other by means of longitudinal muscle-strands. The segments 11, 12 and 13 are covered at their internal side with a brown, horny layer, thicker than the longitudinal muscular layer and showing the same structure as the modified septa. As suggested by Perrier this organisation must give firmness as well as strength to the anterior region of the body for the purpose of burrowing.

The intestinal canal (fig. 2) commences with a large pharynx, the wall of which shows no glandular structures as in many other Lumbricidae; then follows the oesophagus, with a rather wide lumen, which, before passing

Notes from the Leyden Museum, Vol. XIII.

into the gizzard, shows a wider portion, a specimen of proventriculus. This portion of the digestive tube is situated in front of the first thickened septum (5th), so the gizzard appears to belong to the fifth segment, though lying much farther backward. The tubular intestine then following is furnished in segment 6, 7 and 8 on each side with a large, dark coloured, intestinal gland. Perrier found in his specimen the gizzard situated in segment 6; intestinal glands are not mentioned by him.

The main trunks of the vascular system consist of a dorsal, a ventral and a supra-intestinal vessel. The dorsal vessel is a single tube, which communicates with the ventral trunc by six pairs of commissural vessels in segment 3 to 8; in segment 9, 10 and 11 three pairs of large abdominal hearts (fig. 1, *ah*) are situated, arising from the supra-intestinal vessel, which in the following segments becomes visible on the dorsal surface of the intestinal canal. In this region the dorsal trunc shows a series of large ampullae, and communicates with the supra-intestinal vessel by small vertical vessels, arising from its ventral side. The ampullae of the dorsal trunc are described and figured by Perrier; he found only four pairs of commissural vessels in segment 7—10.

Of the genital organs only the pairs of vesiculae seminales (fig. 1, *vs*) could be recognized; they are not very large and attached to the posterior side of the anterior septum of segment 10 and 11. Perrier found them in the 11th and 12th segment.

The nephridia resemble somewhat those of *Microchaeta* (fig. 3). They consist of a great number of brown-coloured tubules, situated in a longitudinal row close to one another; each tubule forms a loop, the two limbs of which are spirally wound round each other. The whole set of tubules is united by connective tissue and attached to the end of a wide glandular tube, forming a loop which consists of a short limb that descends and a long one that ascends along the row of tubules; the ascending limb forms another U-shaped

bend and passes into a long narrow duct communicating with the interior. Neither the internal funnel, nor the manner of communication of the tubules with the main duct could be observed. It is probable that the whole set of tubules form together one continuous duct, as suggested by Benham for *Microchaeta*. Perrier describes the nephridia as: »des organes simplement un peu flexueux, terminés par une sorte de houppe formée par une série de replis membraneux implantés sur sa portion terminale libre. Cette houppe constitue le pavillon vibratile au milieu duquel s'ouvre le canal." The third nephridium, belonging to segment 5, is modified in an extra-buccal pepto-nephridium (Benham); it consists of a large mass of tubules, covering like a brown gland the whole lateral side of the oesophagus, whilst its main duct forms a loop which extends till near the first nephridium. The communication of Perrier »un oesophage membraneux portant sur ses parois quelques corps glandulaires" no doubt is referable to this organ.

Although our knowledge of the organisation of *Anteus gigas* remains rather incomplete, I believe it may be concluded from the foregoing description, that this species certainly is not identical with *Microchaeta rappi*. This species differs from *Anteus gigas* by the following characters: its setae are very minute and arranged in four couples; its segments consist of a number of annuli, so that it is difficult to limit the anterior somites; its anterior septa, though very strong, are far separated from each other, free from any overlapping; its tubular intestine has only one pair of intestinal glands; its nephridia have a different structure. Perhaps a following fuller investigation will learn us, that both species belong to the same genus, a question which at this moment cannot be settled, because we want any knowledge about the structure of the genital organs. At any rate I believe it can be stated, that there is a close relation between *Anteus*, *Microchaeta* and *Rhinodrilus*.

On the circulation of the blood in earthworms.

In a paper recently published »On *Megascolex coeruleus*» (Quart. Journal of Microsc. Science, Vol. XXXII, p. 49, pl. VI—IX) Mr. A. G. Bourne gives a detailed account of the vascular system of this gigantic earthworm. Upon these observations, partially made in the living animal, the author bases a theory about the probable course of the blood in this worm, and concludes »that throughout the body blood is forced from the contractile vessels into peripheral networks; thence it is conveyed by a system of intestino-tegumentary vessels to intestinal capillaries, and from these it returns to the contractile vessels.” It seems to be unknown to Mr. Bourne, that about twelve years ago I put forward the same view as his with regard to the main question of the circulation in earthworms: whence comes the blood into the dorsal vessel? In my paper »Aanteekeningen op de anatomie van *Lumbricus terrestris*» (Tijdschrift der Nederl. Dierkund. Vereeniging. Dl. III, pl. 6) he will find on page 37: »As to the direction of the course of the blood all observers agree in this point, that the blood flows in the dorsal vessel from the posterior extremity forwards, in the commissural vessels from the dorsal side downwards, and in both ventral vessels (supra- and sub-neural vessel) from the anterior extremity backwards. The integumentary vessels are usually considered to be the afferent vessels, the intestinal vessels to be the efferent vessels of the dorsal trunc. Because the skin is the respiratory-apparatus of *Lumbricus*, the dorsal vessel should be supplied with arterial blood and to be considered as a specimen of aorta, whilst the venous blood, coming from the intestinal canal, should flow to the ventral vessel, which therefore should be comparable with the vena cava. This opinion is also maintained and elaborated by Perrier in his detailed description of the circulation in *Urochaeta*. However I cannot agree with this view. First it must be stated, that the vessel *vt*’ (a branch of the

dorso-integumentary vessel of Bourne) rightly is considered by Perrier himself in *Urochaeta* to be the homologue of the afferent vessel of the dorsal branchiae in Annelida branchiata. Now these branchiae receive always their afferent vessel from the dorsal trunc or its commissural vessels, whilst their efferent vessel joins the ventral trunc. In the vicinity of those branchiae there occur often contractile dilatations of the vessels, which of course tend to surmount the greater resistance, caused by the flowing of the blood through the branchiae. While therefore in the majority of Annelids the dorsal vessel is considered to contain venous blood, that flows in the directions of the branchiae, this should according to Perrier a. o. not be the case in *Lumbricus*, the vascular system of which is constructed on the same pattern."

I believe that Vejdowsky, who agrees with my view that the blood flows from the intestinal capillaries into the dorsal vessel, based his opinion upon the same morphological data, for, on p. 117 of his *System und Morphologie der Oligochaeten*, he refers to *Alma nilotica*, which is furnished with branchiae in the posterior region of the body; this curious Oligochaeta from the banks of the Nile was first mentioned by Grube (*Archiv für Naturgesch.* 1855, p. 129, pl. V, fig. 11—15) and later on described by Levinsen under the name of *Digitibranchus niloticus* (*Vidensk. Meddel. naturh. Forening i Kjøbenhavn*, 1889, p. 321, pl. VII, fig. 7 and 8).

EXPLANATION OF PLATE 6.

- Fig. 1. *Auteus gigas* Perrier; general view of the contents of the body cavity, when the body wall has been cut along the dorsal mid-line: *ah.* abdominal heart; *cv.* commissural vessel; *is.* supra-intestinal vessel; *n.* nephridium; *pn.* extra-buccal pepto-nephridium; *ss.* vesicula seminalis. $\times 1\frac{1}{2}$ diam.
- Fig. 2. View of the intestinal tract and the setae, after removal of other structures: *g.* gizzard; *gl.* intestinal gland; *oe.* oesophagus.
- Fig. 3. Nephridium of the sixth segment. $\times 3$ diam.
- Fig. 4. *a.* Ordinary seta; *b.* elongated seta of the clitellum. $\times 25$ diam.

Notes from the Leyden Museum, Vol. XIII.

NOTE VI.

ON THE MALAYAN AND PAPUAN PIGS IN THE
LEYDEN MUSEUM.

BY

Dr. F. A. JENTINK.

January 1891.

If we separate some aberrant forms like *Babirussa*, *Dicotyles*, *Phacochoerus*, *Potamochoerus* and *Porcula* ¹⁾ from Gray's suborder *Setifera*, there remains a large series of Pigs which present a striking resemblance in external appearance and in dentition; they more or less resemble our common *Sus scrofa*. The latter is the only representative in Europe, meanwhile the others are distributed over Asia, the islands of the East Indian Archipelago and New-Guinea. If comparing the members of this group with *Sus scrofa* and at the same time if paying attention to their geographical distribution, one discovers that the group may be split in several smaller ones which generally coincide with a more or less restricted geographical area; names have been given to the latter smaller groups and different species have been admitted. But if all the large and small islands where at present Pigs are to be found were connected by land with the Indian continent, then I am convinced that there would be naturalists at hand to look upon those Pigs as varieties of *Sus scrofa*,

1) *Porcula salvania* Hodgson is, according to Dr. Garson (P. Z. S. L. 1883), only a young state of *Sus scrofa*.

the North of North Celebes, a large number of Pigs from European origin. A dutch vessel should have been stranded there and plundered by pirates, the Pigs on board however landed and propagated. The inhabitants of Likupang often frequent the named island with perogues to get them; the Pigs are very tame and easily to catch; they are of a whitish color and agree very well with dutch tame Pigs." — In Forster's *Reise um die Welt*, 1783, p. 325, we read: »Es ist merkwürdig, dass Hunde und Schweine, die vorzüglichsten taheitischen Reichthümer, nicht einmal auf allen Inseln des Südmeeres vorhanden sind. Die Bewohner der niedrigen Eilande besitzen zwar durchgehends Hunde, aber keine Schweine; hingegen hatte man Schweine auf den freundschaftlichen Inseln, ohne Hunde anders als dem Namen (*Ghurri*) nach, zu kennen; vermuthlich ist das Thier bey ihnen ausgestorben. In Neuseeland fehlten ebenfalls die Schweine; in Neukaledonien aber, fehlten beydes, Schweine und Hunde. Auch in Tanna hatte man nur Schweine allein. Den Taheitiern schenkten wir das erste Ziegenpaar, welches sich bey unserer zweyten Ankunft daselbst, bereits um zwey vermehrt hatte. Den Einwohnern von Tongatabbu und Tanna schenkten wir die ersten Hunde, den Neuseeländern, Schweine und Hühner; den Neukaledoniern ein paar Hunde und ein paar Schweine. Diese beyden Thierarten, die an und für sich schon so schnell und stark sich vermehren, kommen unter dem sanften Himmelsstriche in den Südländern um desto besser fort, und erreichen frühzeitig ihr völliges Wachsthum."

Every body knows that Pigs are excellent swimmers and herewith they have a very proper way to reach by sea distant islands. Indeed they do so, as we learn f. i. from Forrest (*Voyage à la Nouvelle-Guinée*¹⁾); »les cochons sauvages, nommés *Ben*, passent souvent à la nage, en file, d'une île à une autre: le cochon de derrière appuyant son groin sur la croupe de celui qui précède"; and Wallace

1) See Lesson et Garnot, *Voyage autour du Monde*, 1826, Tome I, p. 174.

(the Malay Archipelago, vol. II, p. 141) wrote: »Pigs are spread all over the Archipelago, even to several of the smaller islands, and in many cases the species are peculiar. It is evident, therefore, that they have some natural means of dispersal. There is a popular idea that pig cannot swim, but Sir Charles Lyell has shown that this is a mistake. In his Principles of Geology he adduces evidence to show that pigs have swum, many miles at sea, and are able to swim with great ease and swiftness. I have myself seen a wild pig swimming across the arm of the sea that separates Singapore from the Peninsula of Malacca, and we thus have explained the curious fact, that of all the large mammals of the Indian region, pigs alone extend beyond the Moluccas and as far as New-Guinea, although it is somewhat curious that they have not found their way to Australia."

De Blainville (Ostéographie, *Sus*, p. 172) says: »Pendant a fait l'observation que, dans l'Archipel Indien, le Cochon de Chine avait passé souvent à la nage, d'île en île, jusque dans la Nouvelle Guinée, où il n'en existait pas originellement... qu'ensuite ils ont émigré aux Nouvelles Hébrides, puis et successivement aux îles des Amis, de la Société et des Marquises."

Finally it is well known that Pigs are very apt to produce varieties, by domestication, combined with differences in food and climate; so Fitzinger (Ueber die Racen des zahmen oder Hausschweines) summed up sixty distinct races of *Sus scrofa*, the supposed origin of our domesticated Pigs; d'Albertis (P. Z. S. L. 1875, p. 531) reports: »that he has not seen two specimens of *Sus papuensis*, in the Yule-island, alike amongst a hundred", so that we may suppose that also among wild pigs there is a great variation among the individuals belonging to a given species.

Now we may suppose the so-called species of wild Pigs to be offsprings from one ¹⁾ or from more species, or main-

1) Vide A. Milne Edwards, Mammifères du Tibet, 1868-74, p. 379: „Je serais assez porté à penser que les nombreux Sangliers asiatiques constituent

tain another hypothesis — it is indisputable that the longer they have been isolated by natural barriers, f. i. by broad and deep waters, the greater chance we have to find the differences of the several groups more constant and more fixed, and therefore the species more circumscribed. And in this respect the large islands of Sumatra, Java, Borneo, Celebes and New-Guinea with the surrounding smaller islands are in the best and most favorable condition. And indeed no other part of the world is so rich in Pigs and in no other part of the world the area of distribution is more circumscribed for each species, so that about each large island here has its own distinct Pig.

I will try to give in the following pages an idea of the geographical distribution of the Pigs in the named Archipelago, especially based upon the collections in the Leyden Museum, where are stored up larger and more complete series of Pigs than in any other Museum.

Sus vittatus S. Müller.

- a, b.* Adult females, stuffed, types of the species. Sumatra. Collected by S. Müller, 1836.
- c.* Adult male, stuffed, one of the types of the species, figured in „Verhandelingen”¹⁾, pl. 29. Sumatra, Padang. Collected by S. Müller, 1836.
- d.* Young male, stuffed, one of the types of the species. Padang. Collected by S. Müller, 1836.
- e, f.* Adult specimens, stuffed. Java. Collected by Kuhl and van Hasselt.

des races locales ou espèces secondaires issues d'une souche commune plutôt que des espèces proprement dites, mais pour résoudre la question, il faudrait pouvoir comparer la tête osseuse et les autres parties du squelette chez un grand nombre d'individus appartenant à chacune de ces variétés, afin de déterminer le degré de fixité des caractères employés par les zoologistes pour les distinguer entre elles; et ces objets d'étude manquent dans nos Musées européens.” Cf. also de Blainville „Ostéographie, 1839—64, T. IV, p. 131”.

1) Verhandelingen over de Natuurlijke Geschiedenis der Nederlandsche overzeesche bezittingen. Zoologie, 1839—1844.

Notes from the Leyden Museum, Vol. XIII.

- g. Young specimen, stuffed. Java. Collected by von Rosenberg, 1866.
- h. Young specimen, stuffed. Java. Collected by Kuhl and van Hasselt.
- i. Very young specimen, stuffed. Java. Collected by Boie and Macklot.

(See Jentink, Catalogue ostéologique, 1887). One skeleton, Java, Tjikao; eleven skulls, Java, Sumatra (Padang and Deli).

(See S. Müller's *Verhandelungen*). The Sundanese in Java call this species *Banen*; at Batavia and at other localities along the north-coast it generally is better known under the name *Babi alang-alang*, because it likes to live under this high and thick growing grass *alang-alang* (*Imperata Koenigii*), wherein it absconds by day. The Malays of the west-coast of Sumatra call it simply *Babi-oetan*, i. e. wild Pig. In Java and Sumatra it is very frequent and is to be found everywhere from the sea-shore till up the mountains at 5000 feet; higher up we did not observe it. It likes large plains grown with *alang-alang*, wild dales overgrown with trees, shrubs and briers, low mountains thickly covered with wood and bamboos, and dark moist regions, along the foot of the high mountains, covered with wildernesses impenetrable to man; the moist and cool djatti- and teakwoods in low countries too are to its taste. It generally lives in bands from 3—5 individuals; very old specimens and especially the sow, if with young, often are met with isolated. The sow prepares a nest from dry leaves, small pieces of wood, stalks of *glaga* (*Saccharum glaga*) and *tapoes* (*Elettaria coccinea*): this nest forms externally a large heap, but internally it is hollow, furnace-shaped, sometimes with a single opening or with two openings the one opposite the other: it whelps 4—7 young ones, generally about in the midst of the dry monsoon, or in June, July or August. — These Pigs cause much trouble to the farmers by their great number, and great damage by their gluttony. They may be called omni-

Notes from the Leyden Museum, Vol. XIII.

vorous; at the sea-shore and in the neighborhood of the villages inhabited by fishermen, they prey upon all kinds of animal substances, especially upon small *Equulae*, which the fishermen spread over the warm sand on the shores for drying. Such animal substances give generally a very disagreeable odor and taste to the flesh of the animal. — In its stomach sometimes there are to be found more or less large balls, agreeing with the so called *aegrageophilae*.

(See H. von Rosenberg, der Malayische Archipel, 1878). Wildschweine, *Sus vittatus*, *Babi-utan*, findet man mit Ausnahme der steileren und felsigen Berggelände überall (auf Sumatra) vom Seestrand an bis zum Gebirge, im Wald wie auf den Grasebenen. In der Umgegend der Redoute zu Pertibi zeigten sie sich besonders häufig. — Ueber die ganze Inselkette (westlich von Sumatra) in grosser Anzahl verbreitet ist endlich ein Wildschwein (*Sus vittatus?*), worauf die Eingeborenen überall hauptsächlich Jagd machen. Die Hausschweine, welche namentlich auf Nias häufig in den Dörfern gehalten werden, sind entweder eingefangene Wildlinge, oder Abkömmlinge von solchen.

(See Dr. B. Hagen, Die Pflanzen- und Thierwelt von Deli auf der Ostküste Sumatra's. Tijdschrift van het Kon. Nederl. Aardrijksk. Genootschap, 1890). Das Wald- oder Wildschwein, Mal. *Babi-utan*, kommt auf Sumatra und Java vor und lebt in Deli in grossen Mengen, die sich, durch das Ausbreiten der Tabakskultur, welche den Hochwald vernichtet und dafür ungeheure Flächen dichten Gestrüppes schafft, nur noch vermehrt hat. Das Wildschwein, etwas schwächer als das europäische, lebt in diesen wüsten, mit Lalang und niederem Busch bestandenen Ländereien rudelweise, und höhlt sich förmliche, oft eine Viertelstunde und mehr lange, verzweigte Gänge oder besser Röhren aus in dem todten Laub und Lalanggras, das in dichten Lagen, Generationen übereinander, den wirklichen Boden, oft bis zu vier Fuss Höhe, bedeckt, während die lebende Generation über diesem Moder, triumphirend, ihre grünen

Fahnen schwenkt, bis auch sie in das Grab zu ihren Füßen hinabsinkt. Ich selbst bin schon einem angeschossenen Eber in einer solchen stockfinsternen Röhre auf Händen und Füßen über hundert Meter weit nachgerutscht. Das Wildschwein richtet, durch seine Wühlereien, in Pflanzungen grossen Schaden an, namentlich in den Padi- (Reis)feldern zur Zeit der Reife, ferner in Pisanggärten, wo es oft in einer einzigen Nacht ganze Gruppen von mannsdicken Stämmen unterwühlt und umwirft, in Zuckerrohr- und Maispflanzungen u. s. w. In Gegenden, wo keine Pflanzungen sind, hält sich das Wildschwein mit Vorliebe an die Wurzelknollen verschiedener *Kladi-* (*Colocasia*, *Caladium*) Arten. Des eminenten Schadens halber, welchen es in den Pflanzungen der Malaien anrichtet, lauern ihm dieselben in den Padifeldern auf und schiessen es. Da ihre Religion ihnen den Genuss von Schweinefleisch verbietet, ja selbst das Geld, welches sie durch den Verkauf des Kadavers lösen könnten, für unrein erklärt, so lassen sie ihre Beute einfach an Ort und Stelle verwesen. Höchstens lässt sich Einer herbei, einem ungläubigen, europäischen oder chinesischen Schweinefresser mitzutheilen, dass da und da ein frisch geschossenes Wildschwein liege. Das *Babi-utan* ist wild und muthig, und greift, schlecht angeschossen, oft den Schützen an, wie mein Jäger zu seinem Schreck erfahren hat, den ein Wildeber über den Haufen warf, mit seinem Gewaffen jedoch glücklicherweise auf den Schaft der Flinte traf und denselben nebst Hahn und Schloss völlig zerbrach und zersplitterte. In mein Hospital erhielt ich einst einen chinesischen Kuli, dessen Schenkel durch die Bisse eines Wildschweins bös zugerichtet waren. — Das ein Wildeber sich mit dem zahmen, überall in Deli gehaltenen, chinesischen Schwein paart, kann ich als verbürgt mittheilen. — Die Battas halten als Hausthier ein Schwein von ausnahmslos schwärzlicher Farbe, das etwas höher auf den Beinen steht als das vorige und über den ganzen Rücken eine bedeutend grössere Mähne von langen Borsten hat. Ich

habe mir leider keinen Schädel des Thieres verschaffen können.

Habitat. Sumatra and Java; probably all the islands westward Sumatra (von Rosenberg, der Malayische Archipel), Banka (S. Müller, Verhandelingen) and Flores (Max Weber, Zoologische Ergebnisse, 1890).

Sus verrucosus S. Müller.

- a. Adult male, stuffed, one of the types of the species, figured in the »Verhandelingen», pl. 28. Java, Parang. Collected by Boie and Macklot.
- b. Adult specimen, stuffed, one of the types. Java. Collected by Diard, 1830.
- c. Half grown female, stuffed, one of the types. Java. Collected by S. Müller, 1833.
- d. Young specimen, stuffed, one of the types. Java. Collected by van Raalte.
- e. Young male, stuffed. Java. Died in the Rotterdam Zoological Garden, 1880.
- f. Very young specimen, stuffed, one of the types. Java, Parang. Collected by Boie and Macklot.
- g, h. Skins of young male- and female-specimens. Java. From the Amsterdam Zoological Garden, 1861 and 1868.

(See Jentink, Catalogue ostéologique, 1887). One skeleton, Java; ten skulls, Java.

(See S. Müller, Verhandelingen). This Pig is called by the Sundanese with the Malay name *Babi*. It generally is less frequent than the *Banen* (*Sus vittatus*), lives more in the high *alang-alang*, in thick grown dales and other distant wild localities in the lower parts of the mountains, and seldom is to be met with in troops but generally alone or two or three together. Its nature is wilder and more courageous, and its strong canines are very dangerous to the dogs. To solitary plantations it is not less disadvantageous than the *Banen*, and therefore the

Notes from the Leyden Museum, Vol. XIII.

natives pursue and destroy it where they can. Its flesh is somewhat ruder and less tasteful than that of the *Banen*, so that the Chinese like it but little and it nearly never is to be eaten by the Europeans.

Habitat. Java.

Sus barbatus S. Müller.

- a. Adult female, stuffed, one of the types of the species, figured in the »Verhandelingen», pl. 30, fig. 1. Borneo, Banjarmassing. Collected by S. Müller, 1837.
- b. Adult specimen, stuffed. Borneo. Collected by Schwauer, 1846.
- c. Young female, stuffed, one of the types, figured in the »Verhandelingen», pl. 30, fig. 2. Banjarmassing. Collected by S. Müller, 1837.
- d, e. Very young specimens, stuffed. Borneo, Pontianak. Collected by Diard.

(See Jentink, Catalogue ostéologique, 1887). One skeleton, Borneo; six skulls, Borneo.

(See S. Müller, Verhandelingen). We often saw the traces of this Pig along the banks of the river Doeson and in the Lawut-lands, but only observed the animal itself a few times, once a sow with four youngs, in the western part of the Lawut-lands. The adult female, figured in the »Verhandelingen» has been hunted by the Dajaks with dogs in the neighborhood of the village Poeloe-lampej, at a little distance from the river Moloekko, in a high forest. The Dajaks along the river Doeson call *Sus barbatus*: *Baboei* or *Bawoei* (the tame Pig *Oenek*), the Bejadjoe-Dajaks call it *Bawoei himba* (Forest-Pig, dutch *Boschvarken*). The Malays and Europeans bestow this wild Pig with the name *Babi poetih* (white Pig, dutch *wit varken*) on account of the light color of its skin and bristles.

Habitat. Borneo, Pontianak, Pleyharie and Banjarmassing.

N. B. *Sus longirostris* Nehring is a species chiefly based upon skulls, no judicious naturalist has seen it in living state

and never a skin of it has been brought over. If — as I suggested ¹⁾ — it will turn out to be *Sus barbatus* in very advanced age, or if Nehring's view is correct must be made out by future investigations.

Sus timoriensis S. Müller.

- a. Semi-adult female, stuffed, one of the types of the species. Timor. Collected by Müller and Macklot, December 1829.
- b. Semi-adult male, stuffed, one of the types, figured in the »Verhandelingen», pl. 31, fig. 1. Timor, Pritti, bay of Koepang. Collected by Müller and Macklot, 1829.
- c, d. Young females, stuffed, types of the species. Timor. Collected by Müller and Macklot, 1829.

(See Jentink, Catalogue ostéologique, 1887). Three skulls, Timor, Pritti.

(See S. Müller, Verhandelingen). We have not been lucky enough to procure fullgrown specimens of this species, although we once saw in a forest of the mountainous country Amarassie (Timor) a much larger individual than that figured (on pl. 31): it, however, was not so tall as the above mentioned species from the large western Sunda-islands. It too seemed to be somewhat darker colored than the five not fullgrown specimens collected by us in the flat coast-land near Pritti. *Sus timoriensis* agrees in external appearance very closely with *Sus vittatus*, and so its behavior too is about the same. We observed the animal, but much more its traces, in the mountains as well as in the flat land, and at the occasion of a beat at Pritti we often saw troops of four to seven specimens. The natives call it simply *Taji mepat* or *nassi* (wild pig, dutch *wild varken*), the Rottinese in the same sense *Bafi foel*.

Habitat. Timor.

1) Cf. Ueber *Sus celebensis* und verwandte, von Dr. Alfred Nehring. In Abhandlungen und Berichte des K. Zoologischen und Anthropologisch-Ethnographischen Museums zu Dresden, 1889, N^o. 2, p. 19.

Sus celebensis S. Müller.

- a. Adult male, stuffed, type of the species, figured in the »Verhandeligen», pl. 28^{bis}, fig. 1. Celebes, Menado. Collected by Forsten, 1841.
- b, c. Nearly fullgrown male and female, stuffed. Celebes, Gorontalo, Toelabollo. Collected by von Rosenberg, April and May 1864.
- d, e. Young females, stuffed. Toelabollo. Collected by von Rosenberg, April 1864.
- f, g, h. Very young individuals, stuffed. Celebes. Collected by Forsten.
- i. Skin of an adult specimen. Morotai. Collected by Bernstein, 1 May 1863.
- j. Skin of an adult female. Morotai. Collected by Bernstein, 1862.
- k, l. Skins of very young specimens. Morotai. Collected by Bernstein, 1862.
- m. Skin of a young specimen. Batjan. Collected by Bernstein, February 1862.

(See Jentink, Catalogue ostéologique, 1887). Eight skulls, Celebes, Batjan and Morotai.

(See von Rosenberg, die Malayische Archipel, 1878). *Sus celebensis* (*Bovi*¹) ist sehr allgemein, zumal in dem offenen, mit Gras bewachsenen Flachland in der Umgegend von Limbotto und Bone, und unterscheidet sich wesentlich von seinen auf Java lebenden Gattungsverwandten. Der Eber trägt als besonderes Kennzeichen einen Büschel weisser Borsten zwischen Hals und Schulter. Die Jungen haben das bekannte gelblichbraun gestreifte Jugendkleid, welches später braun, und beim ausgewachsenen Thier schwarz wird. In Gegenden, wo sie wenig gestört werden, sieht man öfters wilde Schweine unter zahmem Vieh auf der Weide. Als Mahomedaner verabscheuen die Be-

1) *Bovi* is not correct, I suppose, as von Rosenberg wrote always in his Catalogues *Booi*, the title too used by him in his »Reistogten in de Afdeeling Gorontalo.»

wohner dieses Thier und machen allenfalls nur, um es zu tödten, Jagd darauf.

(See von Rosenberg, Reistogten in de Afdeeling Gorontalo, Kon. Inst. Taal-, Land- en Volkenkunde, 1865). This species, especially peculiar to Celebes and neighboring islands, is to be met with here (Gorontalo) everywhere in small troops or families.

Habitat. Celebes: northern (Menado, Bone, Limbotto, Toelabollo), Forsten and von Rosenberg; southern (Pare-Pare, Loka near Bonthain, Katjang, Bira, Birakeke), Max Weber (Zoologische Ergebnisse, 1890). Saleyer, Max Weber (l. c.). Batjan, Bernstein. Morotai, Bernstein. Ternate, Halmahera, Batjan, Amboina and Celebes (see Dr. Finsch, Neu-Guinea und seine Bewohner, 1865).

Sus papuensis Lesson.

a. Skin of a halfgrown female. Arou, Wokam. Collected by von Rosenberg, April 18, 1865.

b. Skin of a rather young specimen, Waaigeou. Collected by Bernstein, March 24, 1863.

Skull belonging to skin a.

(See von Rosenberg, Die Malayische Archipel). *Sus papuensis* (*Byen* in Misool, *Kau* in die Aru-Inseln, *Aouran* in Jappen, *Nava* in Hattam, Neu-Guinea) kommt in ausserordentlicher Menge vor, zumal in flachen Gegenden, wie z. B. auf Biak. Die Eingeborenen lieben das Fleisch sehr und jagen das Thier mit Hunden. Zu Kwawi war ich einst Augenzeuge, wie rasch ein eben erlegtes Schwein zerstückt und vertheilt wurde. Dasselbe ward, schmutzig wie es war, in ein hellflammendes Feuer geworfen, um die Borsten oberflächlich abzusengen, hierauf in Stücke zerschnitten, mit Haut und Eingeweiden unter die Umstehenden vertheilt und $\frac{1}{2}$ Stunde nach Anlegung des Feuers war das ziemlich grosse Thier bis auf die Knochen vertilgt. Als Hausthiere findet man Katzen, Schweine und Hunde. Die Schweine, welche hie und da in den Dörfern

in Ställen gehalten werden sind gewöhnlich eingefangene Wildlinge.

(See von Rosenberg, l. c. p. 362). »*Sus aruensis* (*Tāfu*) kennzeichnet sich durch einen weisslichen von der Wange nach dem Hals laufenden Streifen, weissliche Kehle und Unterhals. Man findet das Thier in Menge auf allen grösseren Inseln der Aru- und Kei-Gruppe, sowie auf Koor, sowohl in der Nähe der Küste, als tief im Walde; zumal in den baumlosen Grasflächen der Insel Trangan wird es ausserordentlich häufig angetroffen". *Sus aruensis* v. Rosenberg = *Sus papuensis* Lesson, for 1^o v. Rosenberg described in the above short lines the true *papuensis*, and 2^o our skin *a*, from the Arou-island Wokam, is really a *Sus papuensis*.

(See P. Z. S. L. 1875, p. 531). Among the animals from Yule-island, at the south of New-Guinea, d'Albertis recorded the *Sus papuensis*, of which he relates that he has not seen two alike amongst a hundred. I think his meaning is not very clear, but to my purpose the fact is important that in the Yule-island *Sus papuensis* is to be found.

Peters and Doria (Annali del Museo civico di Storia Naturale, Vol. XVI, p. p. 666 and 698) suppose that *Sus papuensis* may have been introduced from elsewhere in New-Guinea. So p. 666: »il genere *Sus* degli ungulati è probabilmente importato alla N. Guinea per opera dell'uomo", and p. 698: »anche il porco (*S. papuensis*) potrebbe essere stato introdotto alla N. Guinea; i nostri viaggiatori lo hanno raccolto in varie località."

Several years before Peters and Doria wrote, Mr. de Blainville (Ostéographie, 1839—64, T. IV) expressed himself in much more positive terms: »quoique aujourd'hui ce Cochon (*Sus papuensis*) soit devenu sauvage dans la Nouvelle Guinée, où il est extrêmement abondant, on sait positivement qu'il y a été importé."

The first living specimen of *Sus papuensis* brought over to Europe is, as far as I am aware, the animal mentioned

Notes from the Leyden Museum, Vol. XIII.

by Dr. Sclater in the P. Z. S. L. 1881, p. 165, and in the List of the vertebrated animals in the Zool. Gardens, 1883, from Brooker-island, Louisiade Archipelago, and presented by Lieut. de Hoghton. Another living specimen has been brought home by Dr. Finsch and deposited in the Zoological Gardens at Berlin (see P. Z. S. L. 1886, p. 218); it has been obtained in the month of May, on the north coast of New Guinea, near the place noted on the charts »Passir Point'', a point however, which does not really exist; it was then striped, but has now (1886) changed to the coloration of the adult animal.

The material in the different Musea to study this species is very incomplete and the description and plate given by Lesson rather insufficient, so that I think it to be of great importance to reproduce descriptions made by trustworthy scientific travellers as Dr. Bernstein and Dr. Finsch are. In one of Bernstein's manuscripts I find the following description of our specimen *b* from Waaigeou: »Haare der Seiten schwarz mit röthlichgelber Helfte nach der Spitze, während die Wurzelhelfte schwarz ist. Haare des Rückens stärker, länger und vorherrschend schwarz. Stirn und Nase mit schwarzlichen Haaren. Oberhalb des Mundwinkels beginnt ein weisslicher Streifen der schmaler werdend sich über die Wange bis unter das Ohr fortsetzt, ja minder deutlich sogar bis an den vordern Rand des oberen Vorderschenkels. Auf dem Bauche ebenfalls einzelne weissliche Haare und an dem vordersten Theil der Innenseite des Oberschenkels. Ohren inwendig zum Theil mit weisslichen Haaren nur zum kleineren mit röthlichfahlen besetzt.

Longitudo corporis	575 Mm.
Höhe über dem Vorderfuss	310 »
Oberarm bis Sohle	175 »
Höhe am Kreuz	350 »
v. d. Ohröffnung bis Rüsselspitze	166 »
v. d. Ohröffnung bis zum hintern Augenwinkel	45 »
Umfang am Nabel	500 »

Notes from the Leyden Museum, Vol. XIII.

Dr. Finsch was kind enough to send to me a description as follows: »Noch nicht ganz altes Weibchen von Tagai (angegeben auf der Karte in »Finsch, Samoafahrten«). Kopf und ganze Körper rostbräunlich, längs Nacken und Rücken mit schwarzen Borsten gemischt, daher hier melirt; die Borsten nicht sehr lang. Schnauze und der Unterkiefer bis zum Mundwinkel, sowie ein schmaler Ring ums Auge schwärzlich; Kinn und vom oberen Rande des Mundwinkels an, die Unterseite weissfahl (nicht rein weiss); das Weissfahl erstreckt sich über die Kehle, Brustmitte, die Innenseite der Vorderbeine bis zum Knie, den Bauch, bis auf die Bauchseiten und auf die Innenseite der Hinterbeine und den vorderen Rand derselben bis zur Achilles; Vorder- und Hinterbeine vom Knie an dunkler graulichweiss als die Bauchseite. Ohrrand innen weisslich gesäumt, aber die Ohren abgeschnitten, ebenso die Schwanzspitze, so dass man nichts von einem Pinsel sieht, aber der Schwanz graulichfahl, gegen die Spitze zu heller (der Pinsel war wohl noch heller) weiss. Nasenlöcher (Nüstern) fleischfarben; Iris braun, Hufe braun.

Länge von Schnauzenspitze bis Schwanzbasis 102 Cm.

» » Schnauze bis Auge 14 »

» » » » Ohrbasis 25 »

Schwanz nicht gemessen, da verstümmelt".

Habitat. New-Guinea; Jappen, v. Rosenberg; Waaigeou, Bernstein; Misool, Salawatti, Batanta, Koor, Key- and Arou-islands, v. Rosenberg; Yule-island, d'Albertis; Louisiade Archipelago, de Hoghton.

Sus niger Finsch.

- a. Skin of an adult male. Tidore. Collected by Bernstein, 1862.
- b. Skin of a very young individual. Ternate. Collected by Bernstein, November 8, 1862.
- c. Half grown female, stuffed. Goram. Collected by von Rosenberg, September 19, 1865.

Notes from the Leyden Museum, Vol. XIII.

d. Skin of a young specimen. Waaigeou. Collected by Bernstein, March 25, 1863.

Skull belonging to specimen c.

In his »Malayische Archipel, 1878, p. 362'', von Rosenberg described a new species of the Pig-family under the name *Sus ceramensis*, in the following terms: »Einfarbig schwarz ohne irgend welche Zeichnung, identisch mit dem auf Seram lebenden Schwein. Es findet sich auf allen Inseln von Seramlaut bis Tijoor''; and l. c. p. 322: »*Sus spec.*, und *Cervus moluccensis* kommen in ungeheuer Menge vor und bilden das gewöhnliche Wild für die Alfuren auf Seram."

Dr. Bernstein remarked in his Manuscript after having given the above (page 99) mentioned description of *Sus papuensis* from Waaigeou: »ein anderes ganz schwarz mit weissliche untern Theile der Vorderfüsse''; the individual meant herewith by Bernstein is skin d in the Leyden Museum.

Dr. Finsch (P. Z. S. L. 1886, p. 217) described a new species of Pig from New Guinea as follows: »uniform blackish, even when young'', and he named it *Sus niger*.

Now it is evident — and with the above mentioned four specimens before me I am convinced of the fact — that Rosenberg's *ceramensis* and Finsch's *niger* are names for one and the same uniform black species and that therefore there is reason to reject *niger* (Finsch, 1886) in favor of *ceramensis* (v. Rosenberg, 1878), notwithstanding *niger* is a much better name than the title *ceramensis*, an ill chosen local title for a species with a great geographical distribution. There is, however, in the British Museum the skull of a Pig from Ceram, collected by Mr. Wallace and mentioned (in Gray's Catalogue, 1869, and Hand-list, 1873) under the name *Sus verrucosus*, var. *ceramica* (1869), or *Dasychoerus verrucosus*, var. *ceramicus* (1873). Now it may be that it later on appears that this skull really belongs to a specimen of the black Pig, and then I think it logical to call it by the name *ceramicus* Gray or *ceramensis* v. Rosenberg, but I think it wise — in the first place in

order to avoid confusion — for the present to accept the specific title *niger*, bestowed upon the black Pig by Dr. Finsch, a name moreover preferent as it so excellently expresses the most prominent character of the species.

Our four above mentioned specimens have all the bristles of a uniform black color, the adult as well as the young ones; however I remark that our very young specimen *b* (it measures from tip of snout to base of tail about 32 Cm.) presents under a certain lighting very feeble traces of reddish black stripes, one from the angle of the mouth over the cheeks to the shoulder and two along the sides of the body: I suppose that they only are present in very young (younger perhaps than six weeks, see Finsch, P. Z. S. L. 1886, p. 218) specimens and very soon disappear, and therefore not have been observed by Dr. Finsch.

Among our specimens of *niger* and *papuensis* are individuals with one or more legs partly differing in color with the rest of the body, that is to say: there is a more or less broad whitish ring just above the hoofs. I wrote to Dr. Finsch and asked him if he had perhaps observed the like, whereupon he had the courtesy to inform me as follows: »die Zeichnungen (Samoafabrten, mit Holzschnitt) sind nach der Aquarelle gemacht die Sie copiren liessen und zwar nach den Exemplaren, welche ich lebend mitbrachte nach Berlin. Sie wurden dort von Moritz Hoffmann nach dem Leben gemalt, wol die ersten vernünftigen Abbildungen, den die von Lesson taugt auch nichts. Aber diese Bilder stellen nur junge, kaum halbwachsene Thiere (*Sus papuensis* and *Sus niger*) dar. Alte sehen mit ihren gewaltigen Gewehren ganz anders aus, und namentlich alte Eber von *Sus niger* sind collossale Thiere. Ich habe in den Wildniss die Thiere nur fliehen, brechen hören, aber nie eins gesehen, da sie sehr scheu sind. Aber in den Niederlassungen der Eingeborenen sieht man stets Wildschweine in halb zahmen Stande, wenn noch jung ziemlich zahm, alt böseartig; ganz junge (Frischlinge) so zahm als Hunde, Lieblinge der Weiber, die junge Ferkel häufig an ihren Brüsten säugen. Alte

Schweine, namentlich Eber, sieht man selten, da sie vorher gegessen werden. Schweine zur Festmahlzeit der Männer. Man hält gewöhnlich, aber immer in beschränkter Anzahl, Sauen; wenn diese hitzig werden, laufen sie in den Wald und lassen sich von wilden Ebern decken, dann kommen sie wieder ins Dorf. Sie werden dabei wol immer Eber ihrer Art aufsuchen, denn ich habe nie Bastarde von beiden Species gesehen. Dagegen kommen unter den halbdomesticirten Schweinen der Eingeborenen zuweilen Exemplare mit weiss an den Beinen vor, vielleicht ein Vorderfuss oder Fessel oder an zwei Beinen, aber immer unregelmässig. Dies sind Schweine die vermuthlich schon in ein Paar Generationen in Domestication gezuchtet wurden, und solche weisse Flecke sind sichere Zeichen von Domestication. Die zahmen Schweine von Port Moresby und Blanche Bai in Neu Pommern rechne ich nicht, denn an diesen Plätzen sind schon europäische Hausschweine eingeführt und daher nur gemischtes Blut."

Dr. Finsch's view may be correct or not, it appears that white rings on the legs of the Pigs in question are not uncommon. Our *Sus niger b* has the right hindleg ringed; *c* has four ringed legs, the hindlegs very broadly; meanwhile *d* has only rings round the fore legs. Our *Sus celebensis k* and *l* have four white ringed legs, and *Sus papuensis d* has the hind legs for their greatest part white.

Although it now is to be supposed that the specimens of *Sus niger* living in the above mentioned small islands in a wild state or in domestication, once may have originated from New Guinea, I hardly can believe that there will be some evidence that the most accurate investigations in loco will give any trustworthy answer to this question and that we are obliged to content us with a mere supposition.

Habitat. New Guinea, Finsch; Waaigeou, Ternate and Tidore, Bernstein; Ceram to Tjijoor, von Rosenberg.

Dr. Finsch wrote me: »ich habe *Sus niger* und *Sus*

papuensis überall beobachtet, wo ich an der Küste von Neu Guinea war, dass ist von Freshwater-Bai bis Keppel-Bai an der Südostküste, und an der Ostküste von Ostcap bis Humboldt-Bai! Auf den d'Entrecasteaux und in Neu Brittannien giebt es ebenfalls Wildschweine, doch habe ich nie welche gesehen, nur die Hauer. Dasselbe gilt von Neu Irland."

N. B. There has been described in the Trans. Linn. Soc. London, 1879, p. 276, a Pig from Ternate under the name *Sus ternatensis* Meyer. It is a young specimen and was lent to Prof. Rolleston by Dr. A. B. Meyer: Prof. Rolleston stated, that in colouring of the head it differs from that of any other *Sus* seen by Dr. Meyer or figured by Schlegel — the head being covered all over with long black hairs, except in the region occupied by a broad yellowish brown streak beginning between the eyes and descending to the snout, where it broadens.

I strongly suspect that it is a young *Sus niger* and that the yellowish brown streak is a merely accidental one.

NOTE VII.

ON DACTYLOMYS DACTYLINUS AND KANNA-
BATEOMYS AMBLYONYX.

BY

Dr. F. A. JENTINK.

March 1891.

(Plate 7).

Dactylomys is the name of a genus of South-American Rats, created in 1838 by Mr. Is. Geoffroy-Saint-Hilaire¹⁾ for the reception of *Echimys dactylinus* of Mr. E. Geoffroy-Saint-Hilaire (1817). Mr. Is. Geoffroy bestowed the specific title *typus* on that animal and herein all the later authors²⁾ have followed him, although according the rule of priority it would have been more correct to retain the name given by Mr. E. Geoffroy and to call the animal *Dactylomys dactylinus*. But as it perhaps is a matter of euphony and as Is. Geoffroy's name *typus* once had gained the victory I followed in my paper in the Notes from the Leyden Museum, 1887, p. 224, the bad example of my predecessors.

Natterer brought home from his journeys in South-America two rats, described³⁾ by Andreas Wagner, as belonging to the mentioned genus, under the name *Dactylomys amblyonyx* Natterer, with the following short diag-

1) *Compte rendu des séances de l'Académie des Sciences*, 1838, p. 888; *Annales des Sciences naturelles, Seconde Série*, T. X, 1838, p. 126, and *Magasin de Zoologie*, 1840, p. 26.

2) Except Dr. Trouessart, see *Catalogue des Mammifères vivants et fossiles, Rongeurs*, 1881, p. 124.

3) *Archiv für Naturgeschichte*, 1845, p. 146.

nose: »*Dactylomys* supra flavus, nigro-adspersus, subtus pulchre ochraceus; unguibus dilatatis; cauda tota pilis vestita." The named author published later on¹⁾ a more detailed description based upon the same type-specimens from Natterer's collections. In that paper Wagner makes no mention of skull or dentition. The very exact description of the external parts ends with the following terms: »Natterer erhielt 2 Exemplare, Männchen und Weibchen, aus den Waldungen von Ypanema (Provinz San Paulo). Diese Thiere leben auf Bäumen, klettern sehr gut und tragen in Baumhöhlungen Vorräthe von Samen und Früchten für den Winter zusammen. Das Weibchen war mit einem Jungen trächtig."

As far as I am aware no other specimens of this species have been brought over to Europe, or have been described or mentioned up to the year 1867; in the interim Wagner's paper was the only source. *D. amblyonyx* was unknown or ignored by Mr. Deville, who in 1852²⁾ wrote: »il n'existe dans ce genre (*Dactylomys*), qu'une seule espèce.... caractérisée par Mr. Isidore Geoffroy-Saint-Hilaire, *Dactylomys typus* Is. G. S. H."

In 1872 Mr. R. Hensel³⁾ read a paper entitled: »Beiträge zur Kenntniss der Säugethiere Süd-Brasiliens", before the members of the »Akademie der Wissenschaften zu Berlin", after having shortly mentioned in 1867⁴⁾ his specimens of *Dactylomys amblyonyx*, and after having published in »der Zoologische Garten 1872", a paper concerning more especially the biology of the mammals observed or collected by himself in Southern Brazil. He explained in a very satisfactory way why specimens of *Dactylomys amblyonyx* are so rarely to be found in European Musea:

1) Abhandlungen der II. Classe der Kön. Akademie der Wissenschaften, V. Bd., II. Abth., p. 304.

2) Revue et Magasin de Zoologie, 1852, p. 556.

3) Abhandlungen der Kön. Akademie der Wissenschaften zu Berlin, 1873; Der Zoologische Garten, 1872, p. 80.

4) Sitzungsber. der Gesellschaft naturforschender Freunde zu Berlin, 1867, p. 21.

» Diese Fingermaus (oder Bambusratte) lebt vorzugsweise an den Ufern der Flüsse, wo sie mit baumhohem Bambusrohre dicht bewachsen sind. Da, wo die jungen Schösslinge desselben abgefressen sind, kann man das seltene Thier vermuthen, das bei Tage vielleicht stets verborgen ist. Führt man dagegen in windstiller Nacht und bei hellen Scheine des Vollmondes in der Canoa unter jenen Bambusdickichten hin, so hört man bald hoch in denselben einen merkwürdigen Schrei, den man unbedingt einem Vogel zuschreiben sollte. Bei der grössten Ruhe und Aufmerksamkeit entdeckt man wohl zufälligerweise gegen den hellen Nachthimmel und hoch in den Kronen der Bambusen das kleine rattenähnliche Thier, wie es auf den schwankenden Zweigen mit blitzähnlicher Schnelligkeit auf und nieder klettert. Man schiesst und wartet bis zum Morgen, um zu sehen, ob man getroffen hat, denn in die Tiefe des Dickichts vermag bei Nacht Niemand einzudringen; da finden wir einzelne Haare oder Ueberreste des Körpers am Boden und gewinnen die traurige Ueberzeugung, dass unterdess eine Beutелratte uns zuvorgekommen ist. Für den kundigen Leser wird es keine weiteren Erklärung bedürfen, weshalb das Thier so selten in unseren Museen ist." Very interesting is the following observation: » Merkwürdig ist die Eigenthümlichkeit, dass die Fingermaus die glatten Rohrstengel bei dem Klettern zwischen die zweite und dritte Zehe der Hinterfüsse nimmt und dass darnach diese beiden Zehen gebaut sind." Like Natterer so Hensel observed: » (zwei) trächlige Weibchen hatten nur je einen Fötus."

Hensel collected 2 skeletons, 2 skulls, 2 foetus and 3 specimens in spirits. Skeleton with 13 ribs, 6 lumbar, 3 sacral and 36 (or more) caudal. He observed ¹⁾: » Nach der Form des Schädels und der Zähne scheint die Gattung *Dactylomys* mit den Hystricinen verwandt zu sein, unter

1) Sitzungsbericht der Gesellschaft naturforschender Freunde zu Berlin, 1867, p. 21.

denen sie sich zunächst an *Chaetomys* anschliessen würde." For the rest Hensel said not a single word concerning the remarkable dentition of *D. amblyonyx* nor in this nor in his other papers on the subject.

In 1888 Prof. H. Winge wrote a paper on „Jordfundne og nulevende Gnavere fra Lagoa Santa, Minas Geraes, Brasilien." He had two specimens of *D. amblyonyx* from Rio de Janeiro and Porto Alegre; skull and dentition (partly) figured on plate VII, head and feet on plate VI. As I cannot understand Winge's language I am not able to tell what he stated about the species in question.

Dr. E. A. Göldi from Rio de Janeiro relates ¹⁾ that he personally collected specimens of *D. amblyonyx* and confirms the biological observations made by Dr. Hensel. Nothing about dentition.

The dentition of *D. typus* (*dactylinus*) has been very insufficiently described and figured — I remarked it already in 1887 — meanwhile the dentition of *amblyonyx* has not sufficiently been studied and described — as I just pointed out — and therefore I think that a very accurate and minutely made description of both dentitions may be called a desideratum; the conclusion we arrive at will be unexpected and surprising.

dactylinus ²⁾): the series of molar teeth of opposite sides of the upper jaw very converging and nearly meeting in front, of the lower jaw also converging but in front not surpassing half the distance of the hindmost molars. In both jaws all the enamel folds are directed backward under an angle of about 45°. Each molar divided into two separate lobes; those of the upper jaw in the form of a tuning-fork; in those of the lower jaw (except in the premolars) the foremost lobe presents more the form of a V, meanwhile the other lobe

1) Der Zoologische Garten, 1889, p. 225. Die Bambusratte oder brasilianische Fingerratte, *Dactylomys amblyonyx* Natt.

2) Skull of the specimen discussed in the Notes from the Leyden Museum, 1887.

is a simple elongate enamel fold. The lower premolars present a quite different shape, although like the other molars each divided into two separate lobes, for the anterior lobe is a very short and simple enamel fold, the posterior lobe, however, shows the same enamel folds (one V-shaped and one simple elongated) like the other lower molars but here united together by a small enamel bridge.

*amblyonyx*¹⁾: the series of molar teeth of opposite sides of the upper jaw very slightly converging, of the lower jaw not converging but each series in the middle very slightly curved. In both jaws the enamel folds are nearly perpendicular to the molar series. Molars not divided into two separate lobes (except the lower premolars); the lobes on each tooth of the upper jaw present two very irregular tuning-fork-like folds, united together by a small enamel bridge. The lobes on each tooth (except the premolars) of the lower jaw present an anterior V-shaped fold and a posterior elongate one, united together by a small enamel bridge. The lower premolars show about the same shape and folds like those parts in *dactylinus*, the anterior fold, however, is relatively and absolutely larger than in that species.

The difference in the form of the enamel folds of the dentition in the two named species is so great as to compel me to form a new genus for the reception of *amblyonyx*. This genus I propose to call *Kannabateomys*²⁾.

Dactylomys dactylinus and *Kannabateomys amblyonyx* present moreover in their bony parts as well as in their external characters some differences, as appear to me of more than specific value. So the upper molar series are much more pushed forward in *dactylinus*, and the nasal bones in that species are more elongate and remember what is to be found in *Cavia*, *Dolichotis*, *Lagidium* and *Lagostomus*, meanwhile in *amblyonyx* the named parts

1) Skull of an adult specimen in the Leyden Museum recently procured from Brazil.

2) Κάνα, reed, cane and βάρειν, I mount.

agree much more with *Lasiuromys*, *Loncheres* and *Echimys*; *D. dactylinus* has a typical rat-tail, at first sight naked, so extremely small and short are the few hairs upon it; *K. amblyonyx* on the other hand has a very hairy tail, more like *Lasiuromys villosus* and ending in a tuft of long hairs like in *Loncheres hispida*.

It seems to me very puzzling that *amblyonyx* up to this date always has been regarded as belonging to the genus *Dactylomys* and I think that lack of material has been the mere reason why it not rather has been enregistered as a *Loncheres* with some species of which genus — f. i. with *Loncheres hispida* — it has indeed much more in common (in external characters, in shape and hairiness of tufted tail, in size, in form of skull, in form of bony palate, in color of the molars, a. s. o.) than with *Dactylomys dactylinus*, notwithstanding *L. hispida* has spiny hairs and sharply pointed curved claws.

Some measurements of the skull of an adult specimen of *Kannabateomys amblyonyx* in our Museum:

Length of skull	58	Mm.
Width between zygomata	28.5	»
Length of nasal bones	16	»
» » upper molar series	14	»
» » lower » »	15.5	»
Diastema upper jaw	12	»

The molars of *Dactylomys dactylinus* are white colored, those of *Kannabateomys amblyonyx* reddish brown; in both species the incisors are smooth and orange colored.

Habitat of *Kannabateomys amblyonyx*: Brazil, Province San Paulo (Göldi), Ypanema (Natterer), Prov. Minas Gerais (Museum at Rio de Janeiro, vide Göldi, l. c. p. 230), Prov. Rio de Janeiro, Porto Real (Leyden Museum), Porto Alegre (Winge), and Prov. Rio Grande do Sul (Hensel).

NOTE VIII.

ON A NEW SPECIES OF LANISTES.

BY

M. M. SCHEPMAN.

(Plate 8, figs. 1 and 2).

Lanistes congicus Boettger.

Testa sinistrorsa, anguste umbilicata, conico-globosa, aut flavido- aut viridi-olivacea, semper fasciis spiralibus purpureis angustis in anfr. ultimo picta; spira scalaris, magis minusve conica; apex obtusus. Anfr. $5\frac{1}{2}$, superne vel acute angulati vel carinati, supra plani, carina interdum linea spirali impressa circumscripta, infra convexiusculi, sutura impressa disjuncti, irregulariter ruguloso-striati, spiraliter non lineati, ultimus $\frac{3}{5}$ altitudinis aequans, convexus, modice inflatus, carina suturalis magis minusve evanescente, ad umbilicum compresso-carinatus, carina obtusa. Apertura subsemicircularis, intus alba, purpureo spiraliter fasciata, peristoma simplex, margine parietali brevi subprotracto, columellari inferoque modice incrassatis. — Operculum tenue, corneum, superne subangulatum, basi subrotundatum.

Alt. 32—35, diam. max. $33\frac{1}{2}$ — $34\frac{1}{2}$, alt. apert. 21, lat. apert. 14—15 mm.

Specimens of this species, collected at Landana, have been procured by the Leyden Museum from Mr. Petit Ainé. I sent some of them to Dr. Boettger of Frankfort o/M., who has occupied himself some time ago with Mollusks from the Congo, and who found them identical with the species described above.

Notes from the Leyden Museum, Vol. XIII.

As the species was not yet described, Dr. Boettger kindly allowed me to publish here his description of the type specimens, which were collected near the village Elau, on 2 days journey from San Salvador, Congo.

The specimens of the Leyden Museum (see plate 8, figs. 1 and 2) are, however, much smaller than those of Dr. Boettger, who says on this subject: I think that none of your two small varieties ought to bear a distinct name.

The specimens vary in the carina of the base, which is more or less sharply marked, and in the elevation of the spire, which is much eroded in nearly all the specimens.

The measurements of a few specimens of the Leyden Museum are:

Alt. 23,	diam. max. $21\frac{1}{2}$,	alt. apert. 15,	lat. apert. 11 mm.
» 16,	» » 21,	» » 13,	» » 10 »
» 16,	» » 19,	» » 13,	» » $9\frac{1}{2}$ »
» $11\frac{1}{2}$,	» » 14,	» » 9,	» » 7 »

Rhoon near Rotterdam, February 1891.

NOTE IX.
A NEW SPECIES OF UNIO.

DESCRIBED BY

M. M. SCHEPMAN.

Unio landanensis, n. sp.

(Plate 8, fig. 3).

Shell oblong, attenuated towards the anterior part, inequilateral, rather inflated, very thin, rather smooth but covered with a thin closely wrinkled epidermis, greenish-olive, with two indistinct green rays on the posterior slope. Upper- or hinge-margin nearly straight, lower margin irregularly curved, its anterior part rising obliquely into the anterior margin, which is regularly rounded and meets the upper margin at an obtuse angle. Posterior side gradually sloping to a wedgelike point. Beaks slightly incurved, eroded, placed at the distance of about one third from the anterior edge of the upper margin; they are slightly inflated, rather elevated, and sculptured with small wavy wrinkles and traces of small knobs, the wrinkles extend towards the front and also, though indistinctly, towards the posterior slope. Ligament rather long, narrow, yellowish brown. From the beaks two shallow grooves are running towards the posterior margin, which correspond with the green rays. Inside of the shell nacreous, nacre rosy. Hinge and teeth very thin, right valve with an elongate triangular tooth, with a slightly notched crest, lateral tooth much elongated, slightly furrowed length-

Notes from the Leyden Museum, Vol. XIII.

wise; left valve with a very indistinct tooth and two lateral ones; anterior muscular scars shallow, posterior ones and pallial scar scarcely visible.

Length 41, breadth under the beaks 19, behind the ligament 22 mill. Diam. 18 mill.

Hab. Landana (Congo), collected by. Mr. Petit Ainé (Leyden Museum).

This shell has externally much the appearance of being an *Anodonta*, the very weak hinge increases still the resemblance. From *Unio Juliana* Rang, which should also look like an *Anodonta*, it differs, as far as may be judged from the description, by the form, which in *Juliana* is described as »oblongue ou arrondie, concave", by the epidermis which is yellow, often adorned with a large number of green rays in *U. Juliana*, while the nacre in that shell is not rosy. About the sculpture of the beaks of *U. Juliana*, Rang says: »leurs sommets à l'extérieur sont armés, surtout dans le jeune âge, de petits tubercules spiniformes."

Rhoon near Rotterdam, March 1891.

NOTE X.

DESCRIPTION DE NOUVELLES ESPÈCES DE
CURCULIONIDES.

PAR

W. ROELOFS.

Ommatolampus pictus, n. sp.

(Planche 8, fig. 4).

Rouge-brun, orné de taches noires; dessous d'un rouge-brun jaunâtre. — Long. 22 mill., rostr. excl.

Tête presque noire. Rostre brun-noirâtre, rugueusement ponctué, surtout à la partie basilaire, pourvu d'un point allongé entre les yeux, d'un autre plus faible vers l'insertion des antennes et d'une rainure profonde sur ses côtés. Antennes de la couleur du rostre.

Prothorax très finement ponctué sur les côtés, orné sur le disque de deux taches noires allongées.

Elytres avec des stries ponctuées larges et peu profondes; une tache noire se trouve sur les épaules; la même couleur couvre les côtés des élytres, commençant avant le milieu; elle s'étend d'abord jusque vers la troisième strie près de la suture, se rétrécit en arrière, couvre l'extrémité et remonte un peu au bout de la suture. Au milieu de ce dessin noir, vers le bord de l'élytre, se voit encore une petite tache rouge.

Pygidium assez fortement ponctué, surtout aux bords; il est couvert d'une courte pubescence, ayant dans un certain jour, un aspect argentin. Ses côtés et le bout sont noirs.

Notes from the Leyden Museum, Vol. XIII.

Dessous d'un rouge-brun-jaunâtre. Le prosternum et les côtés des derniers segments de l'abdomen ponctués, le dernier segment plus profondément. Les sutures des pièces du métasternum, deux lignes allant des hanches antérieures vers le bord antérieur du prothorax, une bande allant des pattes postérieures jusqu'au dernier segment de l'abdomen, le bout de ce dernier et les bords postérieurs des trois segments intermédiaires sont noirs. Les côtés du métasternum et du premier segment abdominal sont garnis d'une pubescence extrêmement fine et serrée, ayant dans un certain jour un aspect argentin. Les pattes sont finement ponctuées; le bout des cuisses, des jambes et les tarses sont noirs.

Le prothorax et les élytres présentent dans un certain jour l'aspect poussiéreux, qui se voit chez beaucoup d'espèces du groupe des Rhynchophorides.

Un individu originaire de Tandjong Morawa, Serdang (N. O. Sumatra) et provenant des chasses du Dr. Hagen. — Musée de Leyde.

Obs. L'*O. Cuvieri* Boh. est synonyme avec l'*O. tetraspilatus* Guér. La description de Boheman date de 1845, celle de Guérin de 1843 au plus tard (voir la fin de la page 384 des »Insectes» de l'Iconographie du Règne animal).

Chevrolat a eu tort de rebaptiser l'*O. Germari* Boh. en *O. Allardi* à cause du *Rhynchophorus Germari* Perty du Brésil, qui actuellement fait partie du genre *Dynamis* Chevr. (Ann. Soc. Ent. de France. 1882. p. 563, et Bull. ent. p. 159).

Depuis la publication du tome VIII du Catalogue de Munich (1871) une seule espèce du genre *Ommatolampus* a été décrite, savoir: *O. stigma* Pascoe (Ann. & Mag. N. H. 5th ser. vol. XIX (1887) p. 374; pl. 11, fig. 8) des îles Andaman.

Oxyopisthen deplanatum, n. sp.

Prothorax aplati par dessus. Noir, côtés du mésosternum, du métasternum et du premier segment de l'abdo-

men couverts par une tache blanche. Cuisses rouges, excepté leur extrémité. — Long. 15 mill., rostr. excl.

Rostre d'un noir-brunâtre, peu courbé, obsolètement ponctué, avec une dépression peu profonde, courte et plus fortement ponctuée sur les côtés devant les antennes. Celles-ci de la couleur du rostre. Tête finement ponctuée.

Prothorax aussi long que large à la base, qui est arrondie; fortement aplati par dessus, la partie aplatie paraissant d'un noir mat, par une ponctuation forte, presque confluyente. Une carène très faible est à peine indiquée au milieu. Les côtés du prothorax et le prosternum d'un noir luisant et munis d'une ponctuation moins serrée que celle du dessus. Les côtés du prothorax sont un peu déprimées au dessus des hanches, et devant les épaules. Le bord rétréci antérieur du prothorax, assez fortement séparé sur les côtés, porte une ponctuation fine et serrée. Ecusson allongé, ovale.

Elytres à peine plus larges que le prothorax à sa base, presque une fois et demi aussi longues que celui-ci, un peu rétrécies en arrière, déprimées autour de l'écusson, derrière les épaules et transversalement derrière le milieu; d'un noir luisant et munies de stries ponctuées.

Pygidium déclive suivant une ligne courbe, en triangle allongé, portant une carène sur la ligne médiane, ses côtés également élevés en carène, son extrémité d'abord un peu élargi et finissant en pointe aiguë. Il est couvert d'une ponctuation allongée et présente vers les carènes latérales un espace mat.

Côtés du mésosternum, épisternums métathoraciques ainsi qu'une tache sur les côtés du premier segment de l'abdomen blancs.

Dessous d'un noir luisant, métasternum vaguement ponctué, segments de l'abdomen plus fortement surtout le bout du dernier segment. Le métasternum est déprimé au milieu de sa partie postérieure et cette dépression se continue sur le premier segment abdominal. Le dernier segment porte vers l'extrémité une dépression allongée fortement ponctuée, suivie d'un bourrelet transversal, isolant l'extrémité de l'abdomen.

Notes from the Leyden Museum, Vol. XIII.

Cuisses postérieures atteignant presque l'extrémité du pygidium. Toutes les cuisses sont rouges jusque près du bout, et portent une petite dent vers leur dernier tiers où la cuisse est un peu évasée sur sa tranche inférieure. Leur dessous est garni de pubescence brune jusqu'à cet endroit. Jambes postérieures munies d'une dent triangulaire sur leur tranche intérieure, près de la base.

Un individu unique, provenant du pays des Niams-Niams, et fourni au Musée de Leyde par Mr. Schlüter.

Oxyopisthen Büttikoferi, n. sp.

Subparallèle, d'un noir uniforme, luisant, antennes d'un brun-rougeâtre vers la base, élytres un peu déprimées, striées-ponctuées; pygidium horizontal, pointu. — Long. 13 mill., rostr. excl.

Rostre environ de la longueur de la tête et le prothorax pris ensemble, lisse. Tête finement ponctuée sur le vertex.

Prothorax un peu plus long que large à sa base, qui est presque droite; peu rétréci en avant, un peu déprimé en arrière, couvert d'une ponctuation serrée. Ecusson petit, allongé.

Elytres presque une fois et demie plus longues que le prothorax, à peine plus larges que lui, à leur base; un peu déprimées à la base et transversalement derrière le milieu, munies de stries ponctuées assez larges.

Pygidium horizontal, très allongé, couvert de points plus denses à sa base; ses côtés sont élevés en carène; une carène médiane se prolonge en pointe à l'extrémité et deux taches grisâtres se remarquent vers le bout.

Dessous très luisant, vaguement ponctué, dernier segment de l'abdomen plus fortement surtout vers l'extrémité qui porte une dépression, suivi d'un rebord peu élevé et un enfoncement plus profond vers la pointe. Le métasternum est un peu déprimé en arrière ainsi que le premier segment de l'abdomen. Cuisses postérieures un peu sinueuses et courbées vers le haut, atteignant environ au

Notes from the Leyden Museum, Vol. XIII.

delà du milieu du dernier segment; elles sont fortement dentées vers leur tiers postérieur; les autres cuisses sont faiblement dentées.

Les deux individus que j'ai sous les yeux présentent quelques différences sexuelles; chez la ♀, le rostre est un peu plus long et le pygidium plus étroit et plus allongé. Capturés par Mr. J. Büttikofer à Grand Cape Mount (Libéria). — Musée de Leyde.

Oxyopisthen vittatum, n. sp.

Linéaire, subparallèle, noir, peu luisant; le bout des jambes antérieures brun-rouge; la ponctuation du prothorax et des élytres remplie d'un enduit gris-jaunâtre; une bande blanc-jaunâtre latérale sur le prothorax, se continue sur les côtés du mésosternum, du métasternum et du premier segment de l'abdomen. — Long. 10 mill., rostr. excl.

Rostre d'un noir luisant, courbé, environ de la longueur du prothorax et de la tête pris ensemble, avec une petite ligne imprimée à la base. Massue des antennes peu élargie vers le bout, presque cylindrique. Tête ponctuée.

Prothorax de la moitié plus long que large, très faiblement élargi sur les côtés, peu rétréci en avant, arrondi à la base, couvert d'une ponctuation très serrée, remplie d'un enduit gris-jaunâtre, décoré d'une bande latérale, étroite, blanc-jaunâtre, plus rapprochée sur le devant. Ecusson très petit.

Elytres à peine une fois et demie aussi longues que le prothorax et de la largeur de celui-ci, tronquées au bout, parallèles sur les côtés, garnies de stries ponctuées, dont les points sont remplis d'un enduit gris-jaunâtre, les épaules sont d'un noir luisant.

Pygidium en triangle allongé, rétréci avant l'extrémité qui finit par une pointe aiguë, prolongement d'une carène médiane. Il est couvert d'une ponctuation serrée et ses côtés sont un peu relevés vers le bout; on y remarque deux espaces couverts d'un enduit grisâtre.

Notes from the Leyden Museum, Vol. XIII.

Le prosternum est garni au milieu d'un enduit analogue qui couvre également une petite carène droite entre les hanches antérieures. La bande gris-jaunâtre du prosternum se continue sur les côtés du corps jusqu'au bout du premier segment de l'abdomen. Le métasternum est fortement ponctué, l'abdomen porte une ponctuation encore plus forte, très espacée; le dernier segment présente un petit bourrelet limitant la pointe terminale.

Les pattes sont fortement ponctuées. Les cuisses des deux paires antérieures ont une dent au delà du milieu, les cuisses postérieures sont longuement pédonculées, courbées vers le haut et munies d'une dent vers le dernier tiers; elles dépassent un peu la base du dernier segment de l'abdomen.

Un seul individu, pris par Mr. Greshoff au Congo. — Musée de Leyde.

Obs. Chez les trois espèces d'*Oxyopisthen* décrites ci-dessus, le scape des antennes ne dépasse pas le bord antérieur du prothorax et les articles du funicule sont moins allongés que chez *O. funebre* Ill. (= *funerarium* Thoms. suivant Chevrolat, Ann. Soc. Ent. de France. 1882. p. 568) et *O. Westermanni* Auriv., que j'ai sous les yeux.

Sauf l'*O. Westermanni* Auriv. (Entom. Tidskr. VII (1886) p. 97, note) de la côte de Guinée, qui est la seule espèce de ce genre décrite depuis la publication du tome VIII du Catalogue de Munich, trois genres voisins ont été publiés, savoir:

Haplorhynchus (Valdai) Auriv., Entom. Tidskr. VII (1886). p. 95. Cameroon.

Stenophida (linearis) Pascoe, Journ. Linn. Soc. XIX (1886). p. 336. Mombia.

Anoxyopisthen (Büttneri) Kolbe, Stett. Ent. Zeit. (1889). p. 131. Congo.

La Haye, Mars 1891.

NOTE XI.

THE BIRDS OF BILLITON.

BY

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The Island of Billiton is situated between Sumatra, Borneo and Java. From a geological point of view, it may be considered to be a continuation of the chain, formed by the Malay Peninsula, the Mountains of the Riouw- and Linga Archipelago and of the Island of Banka, from which latter it is separated by Strait Gaspar, while the tolerably broad Karimata Passage separates it from Borneo.

Although Billiton lies in the centre of a zoologically

*) Our readers will remember the communication in the Notes of last year, from the hand of Dr. Jentink, on the Mammals collected by Dr. A. G. Vorderman on the Island of Billiton, during the month of June 1888. Shortly afterwards the well-known Ornithologist of the Malay Archipelago published the ornithological results of the same journey, in a paper: *De vogels van Billiton*, in „*Natuurkundig Tijdschrift voor Nederlandsch Indië*” (deel L (1890), pp. 410—519). As the Mammals above mentioned are already published in our Notes, and the *Natuurkundig Tijdschrift* not being easily accessible to every Ornithologist, the mentioned paper, moreover, being printed in Dutch, and ornithological investigations having been the principal reason of Mr. Vorderman's visit to the island, it may be advisable and Mr. Vorderman kindly allows to publish here a brief extract from this interesting paper. The list of Birds will immediately be followed by another, enumerating the Lepidopterous Insects collected on the same trip, prepared by Mr. P. C. T. Snellen, and originally published in the „*Tijdschrift der Nederlandsche Entomologische Vereeniging*” (vol. XXXIII, p. 279, pl. 12).

Leyden Museum, February 1891.

J. BÜTTIKOFER.

Notes from the Leyden Museum, Vol. XIII.

tolerably well-explored region, the fauna of this island was still unknown. That was the reason for my visit to the island in the month of June 1888, during which time I not only travelled through the greater part of it, but also chanced to cross to the neighbouring Island of Mendanao, where I spent three days in the vicinity of the light-house, situated on the mountain-ridge. This tolerably large island belongs to the same geological formation as Billiton, and is separated from this latter island by a narrow passage.

The ornithological collection, brought together during my stay on Billiton and Mendanao, contains not a single species of which the habitat is restricted to these islands. Of the 93 species, contained in the list, there are 32 which are not found in Java, 10 which are not found in Borneo, 8 are not known from Malacca, and only 5 not from Sumatra. The avifauna of Billiton, therefore, seems to agree more with that of Sumatra than with that of Malacca, less with that of Borneo, and the least with that of Java. To my and my huntsmen's astonishment we found no crows on the islands, nor any species of *Ploceus*, nor *Sturnopastor jalla* and *melanopterus*, nor *Acridotheres griseus*, all of them species which are tolerably common in Java.

FAM. FALCONIDAE.

1. *Onychaëtus malayensis* (Reinw.). Billiton.
2. *Haliastur indus* (Bodd.). Billiton, Mendanao. Native name: *Lang*.

FAM. STRIGIDAE.

3. *Scops lempiji* (Horsf.). Billiton, one specimen.
4. *Ketupa javanensis* (Less.). Billiton, one specimen.

FAM. PSITTACIDAE.

5. *Palaeornis longicauda* (Bodd.). Native name: *Bajang*. Very common on both islands, generally 10

Notes from the Leyden Museum, Vol. XIII.

to 15 specimens together, becomes very tame and is often kept as cage-bird by the natives.

6. *Loriculus galgulus* (Linn.). Native name: *Kelinsak*. Billiton, Mendanao, nesting in hollow trees.

FAM. TROGONIDAE.

7. *Pyrotrogon duvaucelli* (Temm.). Native name: *Pandai darè*. Billiton.

FAM. CAPITONIDAE.

8. *Chotorea versicolor* (Raffles). Native name: *Too-toet*. Very common on both islands, all day long producing the monotonous sounds; too-too tootoot, repeated several times after each other.

FAM. PICIDAE.

9. *Jyngipicus fusco-albidus*, Salvad. Billiton, one specimen.
 10. *Callolophus malaccensis* (Lath.). Billiton, two specimens.
 11. *Meiglyptes tukki* (Less.). Native name: *Platok badok*. Billiton, 3 males and 1 female obtained.
 12. *Micropternus brachyurus* (Vieill.). Native name: *Platok kidjang*. Very common on both islands.
 13. *Sasia abnormis* (Temm.). Billiton, where it seems to be a rare species. Only one specimen obtained.

FAM. CUCULIDAE.

14. *Cacomantis sepulcralis*, S. Müll. Billiton. One specimen obtained.
 15. *Rhopodytes sumatranus* (Raffl.). Native name: *n'Doroe*. Very common on both islands, and not shy at all.

FAM. BUCEROTIDAE.

Buceros species. Billiton. On a high tree, I saw once two hornbills, which, with the aid of my spyglass, easily

were recognized to be *Buceros rhinoceros*. It would have been very interesting to make out if they belonged to the Sumatran form or to *B. rhinoceroïdes* Temm., from Borneo. Unfortunately I was not happy enough to have a shot at them, and the question, therefore, could not be dissolved.

FAM. MEROPIDAE.

16. *Merops bicolor*, Bodd. Native name: *Birik*. Not rare in Billiton.

FAM. ALCEDINIDAE.

17. *Alcedo meninting*, Horsf. Native name: *Peninting itam*. Billiton, along the small rivulets, but much rarer than the very common *Ceyx innominata*.
 18. *Pelargopsis leucocephala* (Gm.). Native name: *Tidaut kalak*. Along the banks of the Lingang River, Billiton.
 19. *Ceyx innominata*, Salvad. Native name: *Peninting merah*. Billiton, along rivulets.
 20. *Caridagrus concretus* (Temm.). Native name: *Kekoewai*. Not rare in the interior of Billiton.
 21. *Sauropatis chloris* (Bodd.). Native name: *n'Kakë*. Billiton and Mendanao, along the beach.
 22. *Sauropatis sancta* (Vig. & Horsf.). Native name as above. Billiton and Mendanao.

FAM. CORACIIDAE.

23. *Eurystomus orientalis* (Linn.). Native name: *Tiong batoe*. Tolerably common on both islands. Iris brown, bill and feet lively red, eyelids red.

FAM. EURYLAEMIDAE.

24. *Eurylaemus javanicus*, Horsf. Native name: *Sempoer oedjan*. Tolerably common all over in Billiton; his voice is compared by the sound of falling rain.
 25. *Eurylaemus ochromelas*, Raffl. Native name: *Sempoer oedjan darat*. Billiton.

Notes from the Leyden Museum, Vol. XIII.

26. *Cymborhynchus macrorhynchus* (Gm.). Native name: *Sempoer oedjan soengai*. Billiton. Two specimens, both with white spots on the three outermost pairs of tailfeathers.

FAM. CAPRIMULGIDAE.

27. *Caprimulgus affinis*, Horsf. Native name: *Kolong*. Common in Billiton.
28. *Caprimulgus concretus*, Bp. Native name: *Kolong*. One specimen from Billiton.

FAM. CYPSELIDAE.

29. *Collocalia fuciphaga* (Thunb.). Billiton. I shot one specimen on the plain at the northern foot of the Tadjem Mountain. No informations about the nesting places could be obtained from the natives.
30. *Dendrochelidon longipennis* (Rafin.). Native name: *Kelajang kclēpitoet*. Billiton, very common near Begantong in the interior.

FAM. HIRUNDINIDAE.

31. *Hirundo javanica*, Sparrm. Native name: *Kelajang*. Billiton, Mendanao. Plentiful at Tandjong Pandan, where it is found nesting in the open galleries of the European dwelling-houses.
32. *Hypothymis azurea* (Bodd.). Native name: *Boeroeng taroem*. Very common in Billiton.
33. *Leucocerca javanica* (Sparrm.). Native name: *Gandarassi*. Billiton, not common.
34. *Terpsiphone affinis* (Hay). Native name: *Boeroeng tali kepang*. Billiton.

FAM. ARTAMIDAE.

35. *Artamus leucorhynchus* (L.). Billiton, Mendanao.

FAM. CAMPEPHAGIDAE.

36. *Pericrocotus ardens*, Boie. Billiton.

Notes from the Leyden Museum, Vol. XIII.

37. *Irena cyanea*, Begbei. Native name: *Mas kapor*.
Mendanao.

FAM. LANIIDAE.

38. *Myiolestes obscurus* (Horsf.). Billiton. One male collected.
39. *Hyloterpe brunneicauda*, Salvad. Billiton.

FAM. NECTARINIIDAE.

40. *Prionochilus percussus* (Temmm.). Native name: *Pēntis koembang*. Billiton, not very common.
41. *Prionochilus thoracicus* (Temmm.). Billiton. Only one specimen obtained.
42. *Prionochilus maculatus* (Temmm.). Native name: *Pēntis koedong*. Billiton.
43. *Dicaeum trigonostigma*, Scop. Native name: *Pēntis*, of the female: *Pēntis bēnaloeng*. Billiton.
44. *Aethopyga siparaja* (Raffl.). Native name: *Kēlajoet*. Billiton, not common.
45. *Nectarophila hasseltii* (Temmm.). Native name: *Kēlajoet*. Billiton.
46. *Chalcostetha insignis* (Jard.). Native name: *Kēlajoet*. Billiton.
47. *Anthreptes malaccensis* (Scop.). Native name: *Kēlajoet*. Billiton, Mendanao.
48. *Chalcoparia singalensis* (Gm.). Native name: *Kēlajoet*. Billiton.
49. *Arachnothera longirostra* (Lath.). Native name: *Tjotjapan*. Billiton.

FAM. MELLIPHAGIDAE.

50. *Jora viridissima*, Bp. Native name: *Poenai ara*. Billiton, common.
51. *Phyllornis sonneratii* (Jard. & Selby). Native name: *Boeroeng daun*. Billiton.
52. *Phyllornis icterocephala*, Less. Native name: *Boeroeng daun*. Billiton.

FAM. BRACHYPODIDAE.

53. *Pycnonotus analis* (Horsf.). Billiton.
 54. *Pycnonotus plumosus*, Blyth. Native name: *Berëbë*. Billiton.
 55. *Pycnonotus pusillus*, Salvad. Native name: *Berëbë*. Billiton.
 56. *Jole olivacea*, Blyth. Native name: *Berëbë*. Billiton. Iris in adult and young white.
 57. *Brachypodius melanocephalus* (Gm.). Native name: *Pëlintang*.
 58. *Criniger phaeocephalus* (Hartl.). Native name: *Berëbë irang*. Billiton.

FAM. TIMELIIDAE.

59. *Mixornis gularis* (Raffl.). Native name: *Sepompong*. Billiton.
 60. *Cyanoderma erythropterum* (Blyth). Billiton.
 61. *Macronus ptilosus*, Jard. & Selby. Native name: *Sepompong gadoek*. Billiton.
 62. *Drymocataphus nigricapitatus* (Eyt.). Native name: *Boeroeng pëlandoek*. Billiton.
 63. *Brachypteryx malaccensis*, Hartl. Native name: *Boeroeng pëlandoek*. Billiton.
 64. *Setaria pectoralis* (Salvad.). Billiton.

FAM. PITTIDAE.

65. *Pitta cucullata*, Hartl. Native name: *Popak*. Billiton, common.

FAM. SYLVIIDAE.

66. *Orthotomus borneoensis*, Salvad. Native name: *Kroedjik*. Billiton.
 67. *Orthotomus cineraceus*, Blyth. Native name: *Kroedjik*. Billiton.
 68. *Orthotomus ruficeps* (Less.). Native name: *Kroedjik*. Billiton.

Notes from the Leyden Museum, Vol. XIII.

69. *Orthotomus flavoviridis*, Moore. Native name: *Kroedjik*. Billiton. Hitherto only known from Malacca.
70. *Cisticola cursitans* (Frankl.). Native name: *Ketoppi*. Billiton.

FAM. SAXICOLIDAE.

71. *Kittacincla macroura* (Gm.). Native name: *m' Boeroek*. Billiton.
72. *Copsychus mindanensis* (Gm.). Native name: *Moerai*. Billiton, Mendanao.

FAM. STURNIDAE.

73. *Calornis chalybaea* (Horsf.). Native name: *Perling*. Billiton.
74. *Gracula javanensis* (Osborn). Native name: *Tiong*. Billiton, Mendanao.

FAM. ORIOLIDAE.

75. *Oriolus indicus*, Briss. Billiton.

FAM. TRERONIDAE.

76. *Treron nasica*, Schleg. Native name: *Poenai koenok*. Billiton. The colors of the naked parts are as follows: anterior part of bill Naples-yellow, posterior part wine-red. Loral part, space round the eye and behind the latter pale yellowish green, iris orange yellow, feet wine-red, nail pale horn-color, bottom of feet dirty yellow. On the plate, contained in the work on the Sumatra-Expedition, the colors of these parts are inaccurate.
77. *Treron vernans* (Linn.). Native name: *Poenai daun*. Billiton, Mendanao.
78. *Treron fulvicollis* (Wagl.). Native name: *Poenai sawang*. Billiton.
79. *Ptilonopus jambu* (Gm.). Native name: *Poenai djamboe*. Billiton.

Notes from the Leyden Museum, Vol. XIII.

80. *Carpophaga aenea* (Linn.). Native name: *Pèrgum*. Billiton, Mendanao.

81. *Carpophaga bicolor* (Scop.). Billiton.

FAM. COLUMBIDAE.

82. *Spilopelia tigrina* (Temm.). Native name: *Tèkoekoer*. Billiton.

FAM. GOURIDAE.

83. *Chalcophaps indica* (Linn.). Native name: *Lim-bokan*. Billiton.

84. *Calloenas nicobarica* (Linn.). Native name: *Boeroeng djoenai*. This pigeon is not found in Billiton, but on some small neighbouring islands, for instance in Poeloe Lima in the Gaspar Strait, where no beasts of pray and no monkeys are found.

FAM. ROLLULIDAE.

85. *Rollulus roulroul* (Scop.). Native name: *Siauw*. Billiton.

FAM. PERDICIDAE.

86. *Areoturnix plumbipes* (Hodgs.). Native name: *Poejo*. Billiton, one specimen.

87. *Excalfactoria chinensis* (Linn.). Billiton. A male specimen obtained.

FAM. GLAREOLIDAE.

88. *Glareola isabella*, Vieill. Billiton.

FAM. SCOLOPACIDAE.

89. *Numenius phaeopus* (Linn.). Billiton and Mendanao.

FAM. ARDEIDAE.

90. *Herodias intermedia* (v. Hasselt). Billiton. One specimen shot on the Lingang River.

Notes from the Leyden Museum, Vol. XIII.

91. *Butorides javanica* (Horsf.). Native name: *Roetjau*. Billiton.

FAM. CICONIIDAE.

92. *Leptoptilos javanicus* (Horsf.). Native name: *Bango*. Billiton, on the sand-banks near Cape Roe.

FAM. PELECANIDAE.

93. *Fregata aquila* (Linn.). Native name: *Bientajong*. Billiton. On the neighbouring Island of Lankwas and probably on other small islands, this bird is passing the night in great number. The fact, that never a nest of these birds was found, caused the belief amongst the natives, that this bird flies so extremely high up in the air to drop his egg, that this latter breeds out while dropping, and that, in stead of the egg, the young bird reaches the sea.
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NOTE XII.

LIST OF THE LEPIDOPTEROUS INSECTS
COLLECTED BY Mr. A. G. VORDERMAN IN THE
ISLAND OF BILLITON.

BY

P. C. T. SNELLEN.

Up to this day only a single information concerning the Lepidopterous fauna of the island of Billiton, situated between Sumatra and Borneo, was published (see: Godman, Salvin and Druce in Proceed. Zool. Soc. of London for 1878, p. 637, pl. 40). This communication was based upon a small collection made by Mr. S. N. Walter and consisting of thirty-three species. A more extensive collection,

*) In order to have in one and the same journal a complete enumeration of the animals brought from the island of Billiton by Dr. Vorderman, Mr. Snellen kindly allowed me to insert in the Notes from the Leyden Museum the list of the Lepidoptera, published by him in the Tijdschrift voor Entomologie (vol. XXXIII, p. 279; pl. 12) with interesting notes concerning the geographical connection of the species, and with a description and figure of the two new ones.

Besides Mr. Piepers the Leyden Museum also received a certain number of the collected Lepidoptera, and, moreover, a few representatives of other insect-orders, viz. COLEOPTERA: *Aceraius emarginatus* Weber, *Catharsius molossus* Fabr., *Lachnosterna* spec., *Lepidiota* spec., *Tricholepis vestita* Sharp, *Anomala* spec.; HYMENOPTERA: *Vespa tropica* Linn., *Sphex diabolicus* Smith, *Mygnumia aurosericea* Guér. (= *gigas* Taschb.) with its prey: a Mygalid; two species (males only) of *Mutilla*, *Camponotus gigas* Latr.; ORTHOPTERA: *Panesthia javanica* Serv. and a Mantid.

Among the Lepidoptera sent to our Museum were 2 species which are recorded neither by Messrs. Godman, Salvin and Druce, nor by Mr. Snellen, viz. *Adolias Diardi* Snell. v. Voll. var. and *Papilio Agamemnon* Linn., which make the number of Rhopalocera known as yet from Billiton amount to 93 and the total number of Lepidoptera to 108 species. I have intercalated both species in Mr. Snellen's list, with the numbers 35 a and 78 a.

Leyden Museum, February 1891.

C. RITSEMA Cz.

Notes from the Leyden Museum, Vol. XIII.

however, was received in 1888 by Mr. M. C. Piepers, which collection owed its origin to the following circumstances:

During the month of June 1888 Mr. A. G. Vorderman, town-surgeon at Batavia, undertook an excursion to Billiton and the neighbouring island of Mendanao for the sake of his Ornithological studies. In the meantime he had brought together, besides many other natural history objects, an important collection of Lepidoptera, chiefly Rhopalocera, which, for the greatest part, was sent by him to Mr. Piepers. In none of these islands high mountains are found, and the height of the localities where the insects were captured does not surpass 3000 feet. The Lepidoptera, which at present make part of our collection, are of great interest, especially with regard to their geographical connection with those of the neighbouring islands of Sumatra and Borneo, and of the peninsula of Malacca. In my original paper (see Tijdschr. v. Entom. XXXIII, p. 279; pl. 12) all the differences I met with are carefully mentioned, in order to increase the value of my remarks, and to make use as much as possible of the important collection brought together by Mr. Vorderman.

The collection received by Mr. Piepers contained 82 species of Rhopalocera and 11 of Heterocera, together 93 species. Messrs. Godman, Salvin and Druce, moreover, notice 9 Rhopalocera and 4 Heterocera, so that the number of the Rhopalocera known as yet from Billiton increases to 91 species¹). Though there are certainly still many more species to be found, especially of the small Lycaenina and Hesperidina, we have already sufficient evidence that the Lepidopterous fauna of Billiton is much closer connected with that of Malacca, Sumatra and Borneo than with that of Java.

There are only two species, an *Adolias* and a *Chalcusia*, which I believe to be new. Messrs. Godman, Salvin and Druce described 3 species as new, one of which (*Myrina*

1) See, however, the footnote on the foregoing page.

nivea) was also contained in Mr. Vorderman's collection; the second (*Antheraea billitonensis*) was wanting, and the third (*Nyctalemon docile*) does not differ specifically from *Nyctalemon Patroclus*. On the other hand I feel entitled to name three remarkable, probably local, varieties, viz. var. *immaculata* of *Lexias dirtea*, var. *saturata* of *Amblypodia Apidanus*, and var. *aurago* of *Cathaemia haemorrhoea*.

The species recorded by Messrs. Godman, Salvin and Druce, but not collected by Dr. Vorderman, are:

1. *Hestia Clara* Butler, Trans. Ent. Soc. of London. 3rd ser., vol. V, p. 469. (Identical with *Hestia Leuconoe* Erichs.).
2. *Euploea Menetriesii* Felder, Wien. Ent. Monatschr. IV, p. 398. (Probably a variety of *Euploea Alcathoe* Godart.).
3. *Euploea Thoosa* Hübner, Samml. Exot. Schmett. (Variety of *Euploea Radamanthus* Fabr.).
4. *Zeuxidia Horsfieldii* Felder, Novara-Reise. Lepid. p. 460; pl. 62, fig. 4.
5. *Charaxes Schreiberi* Godart, Encycl. Méthod. IX, p. 825.
6. *Callidryas Catilla* Cramer, Uitl. Kap. I, p. 87; pl. 55, fig. C, D. (The species figured here is not named *Catilla* but *Crocale*, and no doubt synonymous with *Pomona* Fabr.).
7. *Papilio Antiphates* Cramer, Uitl. Kap. I, p. 113; pl. 72, fig. A, B.
8. *Papilio Eurypylus* Linné, Syst. Nat. I, p. 754. (Strongly resembling *Evemon* Boisd. which was met with by Mr. Vorderman).
9. *Casyapa Thrax* Linné, Syst. Nat. I, p. 794.
10. *Chaerocampa suffusa* Walker, Cat. Lep. Brit. Mus. Heterocera. VIII, p. 146. — Snellen, Tijdschr. v. Entom. XXVIII, p. 254; pl. 9, fig. 2.
11. *Hypsa Silvandra* Cramer, Uitl. Kap. IV, p. 155; pl. 369, fig. D. (Cf. also Tijds. v. Ent. XXXI, p. 141).

Notes from the Leyden Museum, Vol. XIII.

were recognized to be *Buceros rhinoceros*. It would have been very interesting to make out if they belonged to the Sumatran form or to *B. rhinocerooides* Temm., from Borneo. Unfortunately I was not happy enough to have a shot at them, and the question, therefore, could not be dissolved.

FAM. MEROPIDAE.

16. *Merops bicolor*, Bodd. Native name: *Birik*. Not rare in Billiton.

FAM. ALCEDINIDAE.

17. *Alcedo meninting*, Horsf. Native name: *Peninting itam*. Billiton, along the small rivulets, but much rarer than the very common *Ceyx innominata*.
 18. *Pelargopsis leucocephala* (Gm.). Native name: *Tidaut kalak*. Along the banks of the Lingang River, Billiton.
 19. *Ceyx innominata*, Salvad. Native name: *Peninting merah*. Billiton, along rivulets.
 20. *Caridagrus concretus* (Temm.). Native name: *Kekoewai*. Not rare in the interior of Billiton.
 21. *Sauropatis chloris* (Bodd.). Native name: *n'Kakě*. Billiton and Mendanao, along the beach.
 22. *Sauropatis sancta* (Vig. & Horsf.). Native name as above. Billiton and Mendanao.

FAM. CORACIIDAE.

23. *Eurystomus orientalis* (Linn.). Native name: *Tiong batoe*. Tolerably common on both islands. Iris brown, bill and feet lively red, eyelids red.

FAM. EURYLAEMIDAE.

24. *Eurylaemus javanicus*, Horsf. Native name: *Sem-poer oedjan*. Tolerably common all over in Billiton; his voice is compared by the sound of falling rain.
 25. *Eurylaemus ochromelas*, Raffl. Native name: *Sem-poer oedjan darat*. Billiton.

Notes from the Leyden Museum, Vol. XIII.

26. *Cymborhynchus macrorhynchus* (Gm.). Native name: *Sempoer oedjan soengai*. Billiton. Two specimens, both with white spots on the three outermost pairs of tailfeathers.

FAM. CAPRIMULGIDAE.

27. *Caprimulgus affinis*, Horsf. Native name: *Kolong*. Common in Billiton.
28. *Caprimulgus concretus*, Bp. Native name: *Kolong*. One specimen from Billiton.

FAM. CYPSELIDAE.

29. *Collocalia fuciphaga* (Thunb.). Billiton. I shot one specimen on the plain at the northern foot of the Tadjem Mountain. No informations about the nesting places could be obtained from the natives.
30. *Dendrochelidon longipennis* (Rafin.). Native name: *Kelajang kelëpitoet*. Billiton, very common near Begantong in the interior.

FAM. HIRUNDINIDAE.

31. *Hirundo javanica*, Sparrm. Native name: *Kelajang*. Billiton, Mendanao. Plentiful at Tandjong Pandan, where it is found nesting in the open galleries of the European dwelling-houses.
32. *Hypothymis azurea* (Bodd.). Native name: *Boeroeng taroem*. Very common in Billiton.
33. *Leucocerca javanica* (Sparrm.). Native name: *Gandarassi*. Billiton, not common.
34. *Terpsiphone affinis* (Hay). Native name: *Boeroeng tali kepang*. Billiton.

FAM. ARTAMIDAE.

35. *Artamus leucorhynchus* (L.). Billiton, Mendanao.

FAM. CAMPEPHAGIDAE.

36. *Pericrocotus ardens*, Boie. Billiton.

Notes from the Leyden Museum, Vol. XIII.

- 2, p. 778. — Distant, Rhopal. Malay. p. 137; pl. 11, fig. 6.
Papilio Coryta Cram., Uitl. Kap. I, p. 136; pl. 86, fig. E, F.
21. *Limenitis Nefte* Cram., Uitl. Kap. III, p. 111; pl. 256, fig. E, F. — Moore, Proc. Zool. Soc. of London, 1858, p. 13; pl. 50, fig. 5.
Athyma Nefte var. *nivifera* Distant, Rhopal. Malay. p. 163; pl. 16, fig. 6.
22. *Limenitis Kresna* Moore, Proc. Zool. Soc. of London, 1858, p. 12; pl. 50, fig. 4. — Distant, Rhopal. Malay. p. 161; pl. 16, fig. 3.
23. *Pandita Sinope* Moore, Cat. Lep. Mus. East-Ind. Comp. I, p. 182; pl. 6, fig. 3. — Distant, Rhopal. Malay. p. 146; pl. 12, fig. 13.
24. *Acca Procris* Cram., Uitl. Kap. II, p. 15; pl. 106, fig. E, F.
25. *Neptis Aceris* Lepechin, Reise etc. I, p. 203; pl. 17, fig. 5, 6. — Ochsenheimer, Schmett. von Europa. I, 1, p. 136; IV, p. 17 and 129. — Snellen, in Midden-Sumatra. Lepid. p. 15.
Papilio Leucothoë Cram., Uitl. Kap. IV, p. 15; pl. 296, fig. E, F.
26. *Charaxes Polixena* Cram., Uitl. Kap. I, p. 85; pl. 54, fig. A, B.
27. *Cyrestis Rahria* Westw., Moore, Cat. Lep. Mus. East-Ind. Comp. I, pl. 3a, fig. 2. — Distant, Rhopal. Malay. p. 142; pl. 12, fig. 4.
28. *Zeuxidia Doubledaii* Westwood, Gen. Diurn. Lep. p. 329, n^o. 2, note; pl. 52, fig. 1. — Distant, Rhopal. Malay. p. 424, fig. 124 (♂) and pl. 38, fig. 6.
29. *Amathusia Phidippus* Linn., Syst. Nat., Ed. XII, I, 2, p. 752. — Cram., Uitl. Kap. I, p. 108; pl. 69, fig. A, B.
30. *Thaumantis Klugius* Zincken, Nova Acta Acad. Nat. Cur. XV, p. 165; pl. 15, fig. 11 (♂).

Notes from the Leyden Museum, Vol. XIII.

31. *Clerome Stomphax* Westwood, Trans. Ent. Soc. of London, 2nd ser., vol. IV, p. 186; pl. 21, fig. 3 and 4.
32. *Diadema Bolina* Linn. — Distant, Rhopal. Malay. p. 164; pl. 10, fig. 10 and 12 (♂), and pl. 15, fig. 12 (♀).
33. *Adolias Alpheda* Godart, Encycl. Méthod. IX, p. 384.
Adolias Octogesima Snell. v. Voll., Tijdschr. v. Entom. V, p. 193; pl. 10, fig. 5 (the male, not the female: p. 194; pl. 11, fig. 1).
Adolias Jama Distant, Rhopal. Malay. p. 119; pl. 14, fig. 8 (♂), and pl. 15, fig. 4 (♀).
34. *Adolias decoratus* Butler, Proc. Zool. Soc. of London, 1868, p. 605; pl. 45, fig. 2 and 9.
Euthalia decorata Distant, Rhopal. Malay. p. 122, fig. 41, woodcut (♀); pl. 14, fig. 9 (♂).
35. *Adolias Blumei* Snell. v. Voll., Tijdschr. v. Entom. V, p. 204; pl. 12, fig. 3 and 4.
- 35a. *Adolias Diardi* Snell. v. Voll., Tijdschr. v. Entom. V, p. 188; pl. 10, fig. 2.
 An example of a variety in which the blue colour on the hind wings remains farther removed from the outer margin. Four similar examples from Banka are in the Leyden Museum.
36. *Adolias (Tanaecia) supercilia* Butler, Proc. Zool. Soc. of London, 1868, p. 610, n°. 4; pl. 45, fig. 7. —? Distant, Rhopal. Malay. p. 131; pl. 15, fig. 8.
37. *Adolias (Tanaecia) Pulasara* Moore, Trans. Ent. Soc. of London. 2nd ser., vol. V, p. 71; pl. 6, fig. 2. — Distant, Rhopal. Malay. p. 130; pl. 14, fig. 30 (♀).
38. *Adolias (Tanaecia) Vordermani*, nov. spec. Snellen, Tijdschr. v. Entom. XXXIII, p. 293; pl. 12, fig. 1.
39. *Lebadea Martha* Fabr., Mant. Ins. II, p. 56; id.

Notes from the Leyden Museum, Vol. XIII.

- Ent. Syst. III, 1. p. 139. — Butler, Cat. Diurn. Lepid. by Fabr., p. 59; pl. 1, fig. 4. — Distant, Rhopal. Malay. p. 145; pl. 17, fig. 10 and 11.
- Aconthea Alankara* Horsfield, Cat. Lep. Mus. East-Ind. Comp. pl. 5, fig. 6 (1829).
- Limenitis Paduka* Moore, Cat. Lep. Mus. East-Ind. Comp. I, p. 179.
40. *Messaras Erymanthis* Drury, Illustr. Exot. Entom. I, pl. 15, fig. 3 and 4. — Cram., Uitl. Kap. III, p. 77; pl. 238, fig. F, G. — Distant, Rhopal. Malay. p. 177; pl. 8, fig. 4 (♂).
41. *Cynthia Arsinoë* Cram., Uitl. Kap. II, p. 100; pl. 160, fig. B, C.
Cynthia Dejonge Distant, Rhopal. Malay. p. 185; pl. 10, fig. 1 and 2.
42. *Prothoë Franckii* Godart, Encycl. Méthod. IX, p. 825.
Prothoë Angelica Butler, Ann. and Mag. of Nat. Hist. 5th ser., vol. XVI, p. 53.
Prothoë uniformis Butler, l. c. — Distant, Rhopal. Malay. p. 434; pl. 38, fig. 4.
43. *Lexias Dirtea* Fabr., Ent. Syst. III, 1. p. 59.
Symphaedra Dirtea Distant, Rhopal. Malay. p. 112; pl. 12, fig. 7 and 8 (♂, ♀).
 Var. *immaculata* Snellen, Tijdschr. v. Entom. XXXIII, p. 296.
44. *Apatura Osteria* Westwood, Gen. of Diurn. Lep. p. 305, note.
Eulacera Osteria Distant, Rhopal. Malay. p. 100; pl. 12, fig. 5 and 6 (♂, ♀).
45. *Precis Ida* Cram., Uitl. Kap. I, p. 66; pl. 42, fig. C, D (abominable!); IV, p. 167; pl. 374, fig. C, D.
46. *Junonia Laomedea* Linn. — Cram., Uitl. Kap. I, p. 13; pl. 8, fig. F, G (too dark).
47. *Abisara Echerius* Stoll, Uitl. Kap. p. 140; pl. 31, fig. 1, 1a, 1b.

- Abisara Kausambi* Distant, Rhopal. Malay. p. 189;
pl. 18, fig. 10 and 11 (♂, ♀).
48. *Allotinus subviolaceus* Felder, Novara Reise,
II, p. 368; pl. 35, fig. 27 and 28.
Allotinus Alkamah Distant, Rhopal. Malay. p. 452;
pl. 44, fig. 3.
Logania Andersoni Moore, Journ. Linn. Soc. Vol.
XXI, p. 39; pl. 3, fig. 6.
49. *Lycaena Osias* Röber, Iris n°. 3, p. 56; pl. 5,
fig. 17. — Staudinger, Iris n°. 2, pl. 1, fig. 4.
Lycaena Amphissina Staudinger, l. c. p. 109.
50. *Lycaena Aratus* Cram., Uitl. Kap. IV, p. 144;
pl. 365, fig. A, B.
51. *Lycaena Celeno* Cram., Uitl. Kap. I, p. 50; pl.
31, fig. C, D.
Lampides Aelianus Distant, Rhopal. Malay. p. 228;
pl. 21, fig. 18, ♂ (nec Stoll).
52. *Lycaenesthes (Niphanda) tessellata* Moore,
Proc. Zool. Soc. of London, 1874, p. 572; pl.
66, fig. 6. — Distant, Rhopal. Malay. p. 458;
pl. 42, fig. 13 and pl. 44, fig. 21.
53. *Sithon (Myrina) nivea* Godman, Proc. Zool. Soc.
of London, 1878, p. 640; pl. 40, fig. 3 and 4.
Myrina hiemalis Godman, l. c. fig. 5 and 6. —
Distant, Rhopal. Malay. p. 249, pl. 22,
fig. 13.
54. *Sithon Amrita* Felder, Wien. Ent. Monatschr. IV,
p. 395.
Neocheritra Amrita Distant, Rhopal. Malay. p. 252;
pl. 20, fig. 15 (♀) and pl. 23, fig. 12 (♂).
55. *Sithon Tharis* Geyer, in Hübner's Zuträge, 5tes
Hundert, p. 22; fig. 883, 884. — Distant,
Rhopal. Malay. p. 257; pl. 20, fig. 19.
56. *Sithon Estella* Hewitson, Illustr. of Diurn. Lep.
p. 31, n°. 15; pl. 16, fig. 50 and 51.
57. *Sithon Lisias* Fabr., Mant. II, p. 65. — Boisdu-
val, Spéc. Gén. I, pl. 22, fig. 2.

- Biduanda Boisduvalii* Moore, Journ. Asiat. Soc. Bengal. 1884, p. 31.
58. *Deudoryx Domitia* Hewitson, Illustr. of Diurn. Lep. p. 12; pl. 6, fig. 6 and 7. — Distant, Rhopal. Malay. p. 280; pl. 23, fig. 7 (♂).
59. *Deudoryx Timoleon* Stoll, Uitl. Kap. p. 146; pl. 32, fig. 4. — Boisduval, Spéc. Gén. I, pl. 22, fig. 4.
- Iraota Boswelliana* Distant, Rhopal. Malay. p. 258; pl. 22, fig. 23 (♀).
60. *Amblypodia Centaurus* Fabr., Syst. Ent. p. 520.
- Narathura Centaurus* Distant, Rhopal. Malay. p. 261; pl. 21, fig. 4 and 5 (♂, ♀).
61. *Amblypodia Anarte* Hewitson, Cat. Lycaen. Brit. Mus. p. 5, n° 20; pl. 3, fig. 16 and 17; idem, Illustr. of Diurn. Lep. p. 4, n° 8; pl. 1, fig. 6 and 7.
- Narathura Agnis* Distant, Rhopal. Malay. p. 362; pl. 21, fig. 29 (♀).
62. *Amblypodia Eumolphus* Cram., Uitl. Kap. IV, p. 19; pl. 299, fig. G, H.
- Narathura Farquhari* Distant, Rhopal. Malay. p. 264 and p. 463; pl. 23, fig. 3 (♂).
63. *Amblypodia Abseus* Hewitson, Cat. Lycaen. Brit. Mus. p. 9, n° 40; pl. 5, fig. 51 and 52.
64. *Amblypodia Singhapura* Distant, Rhopal. Malay. p. 273, fig. 84, woodcut (♀).
65. *Amblypodia Apidanus* Cram., Uitl. Kap. II, p. 63; pl. 137, fig. F, G. — Distant, Rhopal. Malay. p. 273, fig. 85 (woodcut).
- Papilio Dorimond* Stoll, Uitl. Kap. p. 166; pl. 37, fig. 4, 4 D.
- Var. *saturata* Snell., Tijds. v. Ent. XXXIII, p. 301.
66. *Amblypodia Antimuta* Felder, Wien. Ent. Mon. IV, p. 233. — Distant, Rhopal. Malay. p. 266; pl. 13, fig. 11.
67. *Amblypodia Metamuta* Hewitson, Illustr. of Diurn. Lep. p. 13; pl. 2, fig. 14 and 15. — Distant, Rhopal. Malay. p. 267; pl. 33, fig. 19.

Notes from the Leyden Museum, Vol. XIII.

68. *Amblypodia Lycaenaria* Felder, Wien. Ent. Mon. IV, p. 396; idem, Novara Reise, II, p. 232; pl. 29, fig. 13. — Distant, Rhopal. Malay. p. 269, fig. 79 (woodcut).
69. *Amblypodia Narada* Horsfield, Cat. Lep. Mus. East-Ind. Comp. I, p. 98; pl. 1, fig. 8. — Distant, Rhopal. Malay. p. 276; pl. 21, fig. 23 (♂).
70. *Pieris Panda* Godart, Encycl. Méthod. IX, p. 147. — Boisduval, Spéc. Gén. I, p. 485. — Snell. v. Vollenh., Monogr. des Piérides, p. 44. — Wallace, Trans. Ent. Soc. of London. 4th ser., vol. IV, p. 369 (*Tachyris*).
Pieris sulphurea Snell. v. Voll., l. c. p. 32; pl. 4, fig. 4.
Pieris Nathalia Felder, Wien. Ent. Mon. VI, p. 285.
Tachyris Nathalia Wallace, l. c. p. 369.
Saletara Nathalia Distant, Rhopal. Malay. p. 317; pl. 26, fig. 1 and 2 (♂, ♀).
71. *Cathaemia haemorrhoea* Snell. v. Voll., Monogr. des Piérides. p. 10; pl. 2, fig. 5.
 Var. *aurago* Snellen, Tijdschr. v. Entom. XXXIII, p. 303.
72. *Terias Hecabe* Linn. — Cram., Uitl. Kap. II, pl. 124, fig. B, C.
73. *Callidryas Chryseis* Drury, Illustr. Exot. Entom. I, pl. 12, fig. 3 and 4. — Distant, Rhopal. Malay. p. 300; pl. 25, fig. 1 and 2, pl. 26, fig. 20 ♀ var.
Papilio Alcyone Cram., Uitl. Kap. I, p. 89; pl. 58, fig. A, C.
Callidryas Pyranthe Snell. v. Voll., Monogr. des Piérides, p. 59.
74. *Papilio Polytes* Linn., Mus. Lud. Ulr. p. 186. — Cram., Uitl. Kap. III, p. 129; pl. 265, fig. A, C.
Papilio Pammon Linn., l. c. p. 189. — Cram., l. c. II, p. 169; pl. 141, fig. B.
Papilio Theseus Cram., l. c. II, p. 128; pl. 180,
 Notes from the Leyden Museum, Vol. XIII.

- fig. B. — Wallace, Trans. Linn. Soc. of London, XXV, p. 52; pl. 2, fig. 2, 4 and 7.
75. *Papilio Helenus* Linn., Mus. Lud. Ulr. p. 185. — Cram., Uitl. Kap. II, p. 90; pl. 153, fig. A, B. *Papilio Iswara* White, Entom. I, p. 340. — Distant, Rhopal. Malay. p. 344; pl. 30, fig. 1 and 2.
76. *Papilio Memnon* Linn., Mus. Lud. Ulr. p. 193. *Papilio Agenor* Linn., l. c. p. 194. — Distant, Rhopal. Malay. p. 339; pl. 29, fig. 1 (♀).
77. *Papilio Sarpedon* Linn., Mus. Lud. Ulr. p. 196. — Distant, Rhopal. Malay. p. 359; pl. 32, fig. 6.
78. *Papilio Evemon* Boisduval, Spéc. Gén, I, p. 234. — Distant, Rhopal. Malay. p. 360; pl. 32, fig. 1.
- 78a. *Papilio Agamemnon* Linn., Mus. Lud. Ulr. p. 202. — Distant, Rhopal. Malay. p. 363; pl. 32, fig. 7. *Papilio Aegistus* Cram., Uitl. Kap. II, pl. 106, fig. C, D.
79. *Hesperia Hyela* Hewitson, Descr. Hesper. p. 23. — Plötz, Stett. Ent. Zeit. 1882, p. 322. *Pirdana Hyela* Distant, Rhopal. Malay. p. 376; pl. 35, fig. 6 (♀).
80. *Tagiades Gana* Moore, Proc. Zool. Soc. of London, 1865, p. 780. — Plötz, Jahresber. Nassau. Vereins. Jahrg. 37 (1884), p. 36. — Distant, Rhopal. Malay. p. 388; pl. 34, fig. 2. *Tagiades Atticus* var. *Caligana* Distant, Rhopal. Malay. p. 387; pl. 34, fig. 6.
81. *Tagiades Folus* Cram., Uitl. Kap. I, p. 118; pl. 74, fig. F. — Plötz, Jahresber. Nassau. Vereins. Jahrg. 37 (1884), p. 55. *Udaspes Folus* Distant, Rhopal. Malay. p. 398; pl. 34, fig. 3.
82. *Ismene Chromus* Cram., Uitl. Kap. III, p. 163; pl. 284, fig. E. — Plötz, Stett. Ent. Zeit. 1884, p. 57, n°. 19.

Notes from the Leyden Museum, Vol. XIII.

- Ismene Chabrona* Plötz, Stett. Ent. Zeit. 1884, p. 56, n°. 16.
- Ismene Contempta* Plötz, Stett. Ent. Zeit. 1884, p. 56, n°. 17.
- Ismene Vitta* Butler, Trans. Linn. Soc. of London. 2nd ser., vol. I, p. 554. — Plötz, Stett. Ent. Zeit. 1884, p. 57, n°. 18.
- Hasora Vitta* Distant, Rhopal. Malay. p. 375; pl. 35, fig. 4.
- Ismene Malayana* Felder, Wien. Ent. Mon. IV, p. 401; idem, Novara Reise, pl. 72, fig. 15. — Plötz, Stett. Ent. Zeit. 1884, p. 57, n°. 20.
- Choaspes Malayana* Distant, Rhopal. Malay. p. 373; pl. 35, fig. 2.
83. *Chalcosia Eusemioïdes* Felder, Novara Reise, II, 2, pl. 83, fig. 10.
84. *Chalcosia Metachloros* Moore, Cat. Lep. Mus. E.-I. Comp. II, p. 321; pl. 8a, fig. 4, 4a (♂, ♀).
85. *Chalcosia analis*, nov. spec. Snellen, Tijdschr. v. Entom. XXXIII, p. 307; pl. 12, fig. 2 (♀).
86. *Hypsa Dama* Fabr., Spec. Ins. II, p. 216; idem, Ent. Syst. III, 2, p. 29. — Snellen, Tijdschr. v. Entom. XXXI, p. 139.
87. *Pseudoblabe bifasciata* Felder, Novara Reise. II, 2, pl. 106, fig. 11 (♀). — Snellen, in Midden-Sumatra. Lepid. p. 36.
- Padenia transversa* Moore, Lepid. of Ceylon, VI, p. 59; pl. 103, fig. 1 (♂).
88. *Birnara nubila* Butler, Trans. Linn. Soc. of London. 2nd ser., vol. I, p. 560. — Tijdschr. v. Entom. XXXIII, pl. 12, fig. 3.
89. *Macroglossa rectifascia* Felder, Novara Reise, II, 2, pl. 75, fig. 7. — Boisduval, Suites à Buffon, Hétér. I, p. 353. — Moore, Lepid. of Ceylon. V, p. 27; pl. 90, fig. 2.
90. *Nyctipao crepuscularis* Linn. — Guenée, Suites à Buffon. Noct. III, p. 182.

Notes from the Leyden Museum, Vol. XIII.

91. *Nyctalemon Patroclus* Linn., Mus. Lud. Ulr.
p. 204. — Guenée, Suites à Buffon, Uran. et
Phalén. I, p. 15.
Nyctalemon docile Butler, Godman, Salvin and Druce,
Proc. Zool. Soc. of London, 1878, p. 642.
92. *Urapteryx Crocopterata* Kollar, in von Hügel's
Kashmir. p. 483. — Guenée, Suites à Buffon,
Uran. et Phalén. I, p. 433.
Urapteryx praetoraria Felder & Rogenh., Novara
Reise, II, 2, pl. 122, fig. 13.
Thinopteryx nebulosa Butler, Illustr. VI, p. 51;
pl. 113, fig. 8.
93. *Hazis Bellonaria* Guenée, Suites à Buffon, Uran.
et Phalén. II, p. 193; pl. 18, fig. 1.
Euschema subrepleta Butler, Illustr. I, p. 57; pl. 14,
fig. 4.
Euschema Bellonaria Dewitz, Verh. Leop. Carol.
Akad. 44, p. 267; pl. 9, fig. 10, 10a, b.
Euschema Ares Weymer, Stett. Ent. Zeit. 1885,
p. 279; pl. 2, fig. 9.
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NOTE XIII.

DESCRIPTION D'UN CURCULIONIDE NOUVEAU

PAR

W. ROELOFS.

Eugithopus elegans, n. sp.

(Planche 8, fig. 5).

D'une forme ovale, analogue à celle de *Poteriophorus vittatus* Gylh.; noir, couvert d'un enduit brun-olive plus ou moins foncé; orné de taches blanches en dessus; dessous d'un blanc-jaunâtre.

♂. Long. 16 à 17 mill., rostr. excl. — Rostre médiocrement courbé, plus épais à la base jusqu'à l'insertion des antennes, finement ponctué à l'exception de l'extrémité, muni d'un point imprimé entre les yeux. Tête finement ponctué.

Prothorax un peu arrondi sur les côtés et plus large que chez *P. vittatus*, obsolètement ponctué, orné de deux bandes d'un blanc-jaunâtre, plus étroites vers leur milieu; une bande de la même couleur, s'effaçant en avant, se trouve un peu plus bas que l'épaule et sur les côtés se voit une autre bande assez large, séparée par une bande brun-olive, de la couleur blanc-jaunâtre du prosternum. Ecusson en triangle allongé, blanc-jaunâtre.

Elytres assez larges, subarrondies au bout, avec des stries faiblement ponctué. Le tour de l'écusson est blanc-jaunâtre et cette couleur se prolonge un peu sur la suture. La même teinte forme les taches suivantes: une de forme carrée un peu irrégulière sur la partie antérieure des élytres, une tache transversale, ou bande, devenant plus étroite vers la suture, derrière le milieu, un petit trait au bout de la suture et un autre près du bout du 5e intervalle.

Notes from the Leyden Museum, Vol. XIII.

Dessous d'un blanc-jaunâtre, peu densément ponctué, avec une ponctuation plus serrée sur l'extrémité de l'abdomen et les côtés de ses segments. Des taches brun-olives se voient sur le mésosternum, sur les côtés du métasternum et les côtés des trois derniers segments de l'abdomen. Les pattes sont d'un blanc-jaunâtre, tirant par place sur le brun-olive; le mucro des jambes et les tarses sont noirs. Sur les jambes se voient de faibles lignes pilifères et sur leur tranche intérieure deux rangées de cils jaunâtres.

Le pygidium, brun-olive, est densément ponctué et porte une carène peu élevée au milieu.

♀. Long. 20 mill., rostr. excl. — Avec la forme plus large commune aux femelles l'individu que j'ai sous les yeux, présente les caractères sexuels suivants:

Le rostre, plus long et plus gros que celui du mâle, porte à sa base un point imprimé, séparant deux tubercules peu élevés; il garde à peu près la même grosseur jusqu'au bout; il est fortement ponctué, pourvu d'une rainure latérale et de deux rangées de petits tubercules et de poils en dessous.

Le métasternum est évasé au milieu. Le premier segment de l'abdomen est applati, le pygidium plus arrondi et plus convexe que celui du mâle et n'a point de carène au milieu.

Le prothorax, le dessous de l'insecte et les pattes sont couverts de pubescence.

Davao, Mindanao, îles Philippines. Deux ♂ et une ♀ provenant du Dr. Platen. — Collection Neervoort van de Poll.

L'espèce doit faire partie du genre *Eugithopus* Chevrolat (Ann. Soc. Ent. France. 1882. p. 576), que l'auteur a formé pour quelques espèces voisines de *Poteriophorus*, et dans lequel il fait également entrer une ancienne espèce que Schönherr avait placée dans ce genre: *P. vittatus* de Gyllenhal.

La Haye, Mars 1891.

NOTE XIV.

A NEW GENUS OF CALANDRINAE

CHARACTERIZED BY

C. RITSEMA Cz.

Having received from Mr. A. L. van Hasselt of Padang Sidempoean, among some other interesting beetles from Sipirok (North West Sumatra), a couple of a beautiful Calandrid of the group Rhynchophoridae, viz. *Macrocheirus spectabilis* Dohrn, I carefully examined the materials of this group in the Leyden Museum, and this examination convinced me of the necessity of dividing Schönherr's genus *Cyrtotrachelus* in two genera.

The following table will clearly show the distinctive characteristics of the genera of the first division of Lacordaire's group Rhynchophorides (Genera des Coléoptères. Tom. VII. p. 271):

- a. Elytra distinctly narrowing backward, conjointly emarginate at the end.
- b. Anterior coxae rather widely separated.
- c. Joints of the funiculus slender, its 2nd joint much longer than the 1st. Rostrum curved. Scutellum elongate lanceolate. The metasternum very strongly convex in its anterior half. — ♂. Anterior tibiae fringed with long hairs at the under margin of their apical half.

MACROCHEIRUS Schönh.

- cc. Joints of the funiculus not or but little longer than broad, its 1st and 2nd joints about equal in length to each other. Rostrum straight. Scutellum acutely triangular with concave sides. The metasternum not

Notes from the Leyden Museum, Vol. XIII.

strongly convex. — ♂. Anterior tibiae fringed with long hairs all along their under margin.

* Elytra with a strong sutural spine at the end. — ♂. Anterior legs very elongate, their femora strongly curved near the base. The abdominal segments simple. ROELOFSIA nov. gen.

** Elytra with a very minute sutural spine. — ♂. Anterior legs but slightly elongate, their femora straight or nearly so. The centre of the 1st, 2nd and last abdominal segment provided with shallow impressions which bear short bristles. CYRTOTRACHELUS Schönh.

bb. Anterior coxae approximate. OTIDOGNATHUS Lacord.

aa. Elytra nearly parallel, conjointly truncate or hardly emarginate at the end. PROTOCERIUS Schönh.

The type of the genus *Macrocheirus* is *M. praetor* Gylh. from Java¹⁾, and up to now two other species of this genus have been described, viz. *M. spectabilis* Dohrn (Stett. Entom. Zeit. 1883. p. 362 and 397) from Nias and West Sumatra, and the allied *M. herveyi* Waterh. (Ann. and Mag. of Nat. Hist. (5) vol. XIX. 1887. p. 295) from Malacca. — The specimen described by Dohrn as being a male, no doubt belongs to the female sex according to the furrow on the sides of the rostrum and the triangular pygidium, whereas no mention is made of the two rows of crenulations on the rostrum nor of the fringe of long hairs on the under margin of the apical half of the front-tibiae, which are very conspicuous characteristics of the male sex. In the genus *Macrocheirus* the penultimate joint of the tarsi is nearly circular (the sides strongly and regularly rounded), in *Roelofsia* and in *Cyrtotrachelus* it is triangular (the sides straight).

The type of the genus *Roelofsia* m. is *Cyrtotrachelus Buquetii* Guér. from Bombay, and with this *Cyrtotrachelus dux* Boh. from Assam is congeneric. The male of a third

1) Perhaps *Curculio* (*Calandra*) *longipes* Drury, a species unknown to me, will prove to belong likewise to this genus.

species of this genus, originating from Cochin China, is described by Fairmaire under the name of *Cyrtotrachelus dichrous* (Ann. Soc. Ent. de France. 1878. p. 273). The specimen, however, described by him as the female of this species, no doubt will prove to be a male of another genus, judging from the rostrum, this being described as slightly denticulate on the margins, and having before the extremity a compressed triangular tubercle.

The type of the genus *Cyrtotrachelus* Schönh. is *Curculio longimanus* F. (= *longipes* F.) from China, of which a presumed variety occurs in the Sunda Islands. A second species of this genus is *Calandra lar* Erichs. from Manilla, whereas two other species have been described by Chevrolat, viz. *C. rufopectinipes* from the Andaman Islands, and *C. obscuriceps* from Ceylon (Ann. Soc. Ent. de France. 1882. p. 556).

The type of the genus *Otidognathus* Lacord. (= *Litorhynchus* Schönh. nec Macquart) is *Litorhynchus Westermanni* Bohem. from Assam. Moreover the following species seem to belong to this genus:

quadrimaculatus Buq., Guér. Icon. Règne anim. Ins. p.

177 (*Cyrtotrachelus*). Java.

myrmidon Buq., l. c. (*Cyrtotrachelus*). Java.

Jansoni Roel., Ann. Soc. Ent. de Belgique.

Tom. XVIII (1875). p. 186 Japan.

Davidis Fairm., Ann. Soc. Ent. de France.

1878. p. 127 (*Cyrtotrachelus*). China centr.

elegans Fairm., l. c. p. 128, note (*Cyrtotrachelus*) Manilla.

nigropictus Fairm., l. c. p. 128 China centr.

subfasciatus Chevrol., Ann. Soc. Ent. de

France. 1882. Bull. p. 111 Sylhet.

bifasciatus Chevrol., l. c. Sylhet.

rubriceps Chevrol., l. c. p. 112 Sylhet.

decemstriatus Chevrol., l. c. p. 557. Sylhet.

comptus Pasc., Ann. a. Mag. Nat. Hist. (5)

vol. 19 (1887). p. 373; pl. 11, f. 6 Cambodia.

celatus Pasc., l. c. p. 374. Cambodia.

Notes from the Leyden Museum, Vol. XIII.

The type of the genus *Protocerus* Schönh. is *Calandra colossus* Fabr. from Java. Besides this, and *molossus* Oliv., *grandis* Guér. and *laetus* Voll. (see Munich Catalogue. VIII. p. 2641), the following species have been described:

fervidus Pasc., Journ. Linn. Soc. XI (1871).

p. 216 Kumaon.

purpuratus Dohrn, Stett. Ent. Zeit. 1881. p. 447. Sarawak.

marginatus Chevrol., Ann. Soc. Ent. de France.

1882. p. 558 Java.

angustipennis Chevrol., l. c. p. 559. Sylhet.

aemulus Dohrn, Stett. Ent. Zeit. 1882. p. 458;

1883. p. 159 Nias.

Leyden Museum, April 1891.

NOTE XV.

A NEW SPECIES OF RHYNCHOPHORUS

DESCRIBED BY

C. RITSEMA Cz.

Rhynchophorus Swierstrae, n. sp. ♂.

Length (without rostrum) 41 mm., that of the rostrum 11 mm.; breadth at the shoulders 17 mm.

Pronotum and elytra dull brown, the former narrowly margined with black and provided on the middle of the disk with an elongate ovate black patch which is divided in a longitudinal direction by a brown stripe; the elytra likewise are narrowly margined with black, which colour widens out on the shoulders and just behind the middle of the lateral margin; the scutellum and a narrow edge along the suture black; the pygidium dull black, fringed at the tip with fulvous hairs; the head, rostrum and antennae as well as the under surface, glossy black; the rostrum above with a brown spot at the extreme base, and the basal abdominal segment with a brown spot at the sides; the legs are glossy; the coxae, trochanters and tarsi are black; the femora and tibiae ferruginous, black at base and tip and along the under surface, which is moreover densely fringed with fulvous hairs, which are short on the posterior femora.

The rostrum is slightly waved on the under surface, strongly so on the upper surface which makes it thinnest about the middle; it has strong punctures in front of the usual interocular pit, then it becomes strongly scabrous;

Notes from the Leyden Museum, Vol. XIII.

this scabrous portion bears some very short and stiff bristles and some black granulations which, towards the end of the rostrum, are arranged in two convergent rows and are placed on a strongly raised compressed ridge ending a little before the apex of the rostrum in an obtusely pointed tooth which slopes towards the extreme tip; a faint furrow is to be seen at about the middle of the sides. The club of the antennae is much less transverse than it is in the male of *Rh. serrirostris* Fabr.

The pronotum is more strongly convex than in *serrirostris*; the sides are regularly rounded, slightly narrowing towards the constricted front-portion; the basal lobe is more deeply sinuated and its median portion distinctly more prolonged backwards. The scutellum is elongate lanceolate.

The elytra are more elongate and more narrowing towards the end than in *serrirostris*, in other respects they are similar. The pygidium is triangular with rounded tip, and it is covered with distinct punctures which are not very close together.

The undersurface is laterally covered with very minute granulations which are placed close together but become sparser and sparser on the abdomen; the deflexed lateral margins of the apical ventral segment are strongly punctured, and fringed at the end; the apex itself truncate in a sinuate manner and provided with a strong and dense punctuation; along the middle the under surface is smooth showing only a few punctures; the metasternum and basal ventral segment have a shallow furrow along the middle.

The legs are distantly punctured, the femora notched on the under surface near to the tip, the under surface of the anterior femora moreover provided on the inside with a compressed ridge which is delicately rugose; the tibiae are slightly dilated on the under surface near to the base which is caused by a ridge which has a thickened margin. The tarsi are spongy beneath.

Hab. Ambarawa: East Java (Bernelot Moens). — A single male specimen in the Leyden Museum.

I have dedicated this species, which belongs to Chevrolat's genus *Omotemnus*¹⁾, to the late K. N. Swierstra, the well-known Conservator of the Entomological Collections of the Zoological Garden at Amsterdam, who died on April 18th, aged 50 years.

Rhynchophorus Swierstrae is a narrower species than *Rh. serrirostris* but especially distinct from it by the waved and keeled rostrum, by the much less transverse antennal club, by the more convex pronotum and its otherwise shaped basal lobe, by the keeled anterior femora, etc.

Leyden Museum, May 1891.

1) Annales de la Société entomologique de France. 1882. p. 559.

NOTE XVI.
TWO SYNONYMICAL REMARKS ABOUT
CURCULIONIDAE

BY

C. RITSEMA Cz.

1. *Macropterus Verlorenii* S. v. V. (Tijdschr. v. Entom. XIV (1871). p. 101; pl. 4, fig. 1) from Timor = *Cer-cophorus floccosus* Chevrol. (Ann. Soc. Ent. France. 1880. p. 259, fig.) from the same island.

2. *Rhynchophorus (Calandra) rubiginus* Wiedem. (Mag. Zool. I, 3. 1819. p. 174) and Gyllenhal (Schönh., Gen. Curc. IV. p. 824) = *Rhynchophorus elegans* Guér. (Icon. Règne anim. Ins. p. 176; 1843). — Notwithstanding Chevrolat (Ann. Soc. Ent. France. 1882. p. 564) created a new genus, viz. *Paratasis*, for the reception of *Rhynchophorus rubiginus* (erroneously called by him *rubiginosus*), its synonym *elegans* occurs as the first Indian species in the genus *Rhynchophorus* (l. c. p. 560).

Leyden Museum, April 1891.

NOTE XVII.
ON THREE EASTERN MOLLUSKS

BY

M. M. SCHEPMAN.

Tritonidea undulata, n. sp.

(Plate 9, fig. 1).

Shell fusiformly ovate, yellowish, with brown spiral ridges. Whorls about 6, the apical ones, which are slightly eroded, appear smooth, the rest rather convex, depressed near the sutures, vertically ribbed with large swollen ribs of which there are from 10 to 14 on the penultimate whorl, and spirally ridged with 4 or 5 waved ridges on the upper whorls, with finer intermediate ones. On the last whorl, the ribs and waves become obsolete about the periphery; this whorl is encircled with a large number of spiral ridges of which from 10 to 12 form conspicuous brown lirae, with from 1 to 6 intermediate ones. Aperture occupying more than half the length of the entire shell, ovate, pale blue within, lip thickened exteriorly, internally with about 10 ridges forming small denticulations towards the lip. Columella callous, slightly excavated above, towards the middle with a few small tubercles on the left margin and a more conspicuous one near the upper part of the aperture. Canal short, oblique.

Length 26, diam. 16, length of apert. with canal 14 mill.

Hab. Japan, collected by von Siebold (Leyden Museum).

This species approaches in form *T. fumosa* Dillw. = *proteus* Reeve, in colour *T. undosa* Linn., but differs from both in form and sculpture. *T. subrubiginosa* Smith should

Notes from the Leyden Museum, Vol. XIII.

be, after the description, still more remote. The specimens vary slightly in the thickness of the ridges, which give the shell a more or less dark appearance.

Canidia Helena Meder,
var. *rotundicosta* Schepman.

Shell narrower than in the type, with the last whorl smaller. Colour much darker, greenish olive brown, costae more broadly rounded, with rather narrow intermediate spaces.

Hab. Java, collected by Groen (Leyden Museum).

Typical specimens of this variety might be considered as a new species, but the character of the costae is rather variable, so as to pass into the typical form, with narrow flattened ribs. The specimens vary in form, some of them being extremely narrow, such specimens may be named: forma *angustior*. They are all darker in colour than the type, which is more decidedly greenish.

Nassa javana, n. sp.

(Plate 9, fig. 2).

Shell acuminate ovate, whitish, marbled with red-brown markings, showing a tendency to form a band near the middle of the last whorl and a second one towards the base, where the brown colour becomes more confluent, and with an articulated band of blue brown blotches near the sutures. Whorls 10, spire acuminate, 3 apical whorls smooth, the 5 subsequent ones rather flat, crossed by numerous ribs and spiral striae; penultimate and ultimate whorls rather inflated, nearly smooth, with only 2 or 3 striae near the suture and 8 near the base; sutures distinct, irregular; aperture oval, white, columella callous, with two plicae near the upper angle of the aperture, and terminating with a sharp curved spine, with a few plicae or granules above it. Outer lip with a thick varix externally and a few folds behind it; edge sharp, with 7 denticles

Notes from the Leyden Museum, Vol. XIII.

near the base, thickened and ridged within, with 13 strong ridges. Canal rather broad, slightly turned backwards.

Length 23, breadth $12\frac{1}{2}$, length of aperture 10 mill.

Hab. Southern Java: Tjilatjap, collected by Mr. Overdijk (Leyden Museum).

This species resembles *N. picta* Dunker in colour, but may be distinguished from that species by the sculpture of the upper whorls, by the denticles of the outer lip and by the larger size; in sculpture it resembles certain varieties of *N. mutabilis* Linn., but it is sufficiently distinct in all other respects.

Rhoon near Rotterdam, May 1891.

N.B. Besides *Tritonidea undulata* Schepm. (fig. 1) and *Nassa javana* Schepm. (fig. 2) the two following species, described in the „Notes” at an earlier date, are figured on Plate 9.

Fig. 3. *Fusus Sieboldi* Schepm., from Japan (Notes Leyden Museum. XIII (1891) p. 62).

Fig. 4. *Oliva Semmelinki* Schepm., from the Strait of Larantoea between Flores and Adonare (Notes Leyden Museum. XII (1890) p. 196).

NOTE XVIII.

A NEW SPECIES OF LATIRUS

DESCRIBED BY

J. C. MELVILL.

Latirus Eppi, sp. n.

L. testa ovato-fusiformi, crassa, fulvo-brunnea, anfractibus lævibus, longitudinaliter costatis, nitentibus, transversim obscure filo-liratis, liris ad suturas distinctioribus, canali subproducto, spiraliter lirato, aperturæ fauce sulcata, albescente, columella quadriplicata, alba. — Long. 24 mill., lat. 10 mill.

Hab. Insula Curaçao (Dr. C. Epp).

This very interesting addition to the genus is at present unique and forming part of the collection of the Leyden Museum. It has been kindly forwarded me by Mr. M. M. Schepman, of Rhoon near Rotterdam, with the request that I would describe it, at the same time wishing that it should bear the name of its discoverer. The nearest approximations to this species are undoubtedly *L. castaneus* (Reeve) and *acuminatus* (Kiener) from both of which it can easily be differentiated by its small size, and other reasons. This specimen is full-grown, and slightly worn, the transverse liræ would in a younger specimen be regularly distributed over every portion of the whorls.

Dr. Epp also found at the same locality an interesting well coloured but small variety of *Latirus distinctus* (A. Adams), a species of rare occurrence, and which has not been figured. I am giving a representation from a large typical specimen in my »Historical account of the genus *Latirus*."

Prestwich, Manchester, March 1891.

NOTE XIX.

POLYCTESIS IGORROTA,
NOVA SPECIES BUPRESTIDARUM

BY

K. M. HELLER.

Statura habitusque P. rhoidis, cuprea, elytris viridi-cyaneis, maculis flavis ornatis; una macula oblonga prope scutellum, una curvata circa angulum humeralem, una in medio prope suturam, una transversa ante apicem et pars media marginis lateralis flava; elytris punctato-striatis, interstitiis primis, secundis et tertiis antice obscure subtiliterque, interstitiis reliquis distincte remote striato-punctatis; scutello punctiforme subtransverso; thorace lateribus late flavo-marginato; segmentis abdominis utrinque flavo-guttatis. Long. 12—14 mm.

Habitat in insula Luzon.

Agreeing in size and shape with *Polycatesis rhois* Mars., but differing in colour and sculpture, and consequently easily distinguishable.

Coppery, elytra dark blue-green, each of them with the following yellow spots: an oblong spot near the scutellum, a c-shaped one around the shoulder, one about the middle of the length near the suture, and an undulate transverse band at the base of the posterior third.

The spots seem to be variable in form, as one of my two specimens shows the hinder part of the humeral spot widened out, so as to form a circular blot, and the transverse band, which extends over eight interstices, simply curved; the other specimen has an additional small longitudinal stripe inside of the shoulder-protuberance, and the transverse undulate band recurved in front near the suture.

The sides of the thorax are rather broadly margined with yellow.

Notes from the Leyden Museum, Vol. XIII.

Underside coppery, the meso- and metasternum as well as the abdominal segments with a yellow spot on the sides.

Sculpture similar to that of *rhois*, but finer, with exception however of the head, where it is as coarse if not slightly coarser. Thorax very finely punctured along the middle of the disk, coarsely so on the sides where the punctures are separated by narrow transverse wrinkles; along the middle the thorax is shallowly impressed, the impression deeper and better limited at the base; moreover a rather indistinct basal impression is present near the lateral angles.

Sides of elytra straight in their basal fourth, then sinuate, and furnished at the end of the straight portion with a small tooth; elytra punctate-striate, the striae behind deeper and broader, interstices sparingly striate-punctate, the punctures in the anterior half of the first, second and third interstices almost completely obliterated, those of the other interstices becoming deeper and closer towards the apex and sides. Outer margin of elytra from the middle to the tip finely serrulate, apex of each truncate and ending in four teeth, the outermost of which stretches beyond the sutural one. — Sutural margin behind distinctly raised.

The whole insect is thinly sprinkled with short white hairs.

P. igorrota may be distinguished from *P. foveicollis* Fairm. from Cambodia (Ann. Soc. Ent. France, 1888. p. 344—45) by its smaller size, by the spotted elytra, by the fine interstitial punctures, etc. etc.

This interesting new species from the Philippine Islands, and *P. rhois* Mars. which occurs in Egypt, Cyprus and Syria, are, with *P. foveicollis* Fairm. the only known representatives of this genus. It was discovered in the North of Luzon near Vigan by Dr. R. Schadenberg, to whom the Royal Dresden Museum is indebted for two specimens of it.

Royal Zoological Museum, Dresden, June 1891.

Notes from the Leyden Museum, Vol. XIII.

NOTE XX.

CONTRIBUTIONS TO THE KNOWLEDGE OF
THE FAMILY BRENTHIDÆ

BY

Dr. A. SENNA.

VI¹⁾.

Descriptions of two new species and Remarks on the female of *Achrionota bilineata* Pascoe and of *Prophthalmus planipennis* Pascoe hitherto undescribed.

Orychodes Ritsemæ, n. sp.

Castaneo-brunneus; capite nitido, postice mutico; rostro prothorace paulo brevior, supra inter antennis et parte basali sulcato, ante antennis planiusculo, utrinque carinula denticulata instructo; prothorace conico, nitidissimo, impunctato; elytris fortiter punctato-striatis, interstitiis angustis, lineolis flavis exornatis. — Long. 13 mill., latit. thoracis $2\frac{1}{3}$ mill., ♂.

Hab. Malacca. (Coll. Senna).

Entirely of a chestnut-brown, the legs and the elytra slightly paler. The head is moderately short, rounded above, shining, impunctate, with a very fine longitudinal impression between the eyes, and the posterior angles without any spine; at the base it is truncated. Eyes rather prominent, olive-greenish. Rostrum shorter than the protho-

1) See for the 1st to 5th Contributions: *Bullettino d. Soc. Entom. Italiana*, Anno XXI, pp. 38—38 and 101—109.

rax, thickish at the base and furrowed, slightly broader to the insertion of the antennæ and canaliculate, beyond these its sides are parallel and with a raised line of small teeth; beneath the apical portion is almost smooth and glossy, while the portion between the antennæ has a longitudinal keel and the basal part is deeply punctured. Antennæ distinctly longer than the prothorax and the head with the basal portion of the rostrum taken together; the first joint stout, clavate and as long as the 2nd and 3rd joints taken together, which are very short; the remainder subcylindrical, pubescent and almost equal in size; the 11th is the longest of all and obtusely pointed at the tip.

Prothorax about two third the total length of the elytra, conical, narrower anteriorly than at the base, widest behind the middle, with the sides rounded and the base transversely furrowed; above brown, the apical margin blackish, impunctate, very shining.

The elytra are about as long as the prothorax and the head with the basal portion of the rostrum taken together, broader than the base of the prothorax, the shoulders are rounded, the sides subparallel, but towards the apex attenuated and at the apex emarginate. The elytra are punctate-striate; the 1st furrow near the suture impunctate, the 2nd and 3rd with small punctures, the remainder, which are also broader, deeply and regularly punctate, with the punctures approximate and the interstices convex, raised. The maculation of the elytra is the following: the 3rd interstice near the suture has a basal line covering a space equal to five punctures; behind the middle, a short line and another near the apex; the 4th interstice has a line equal to three punctures towards the middle, and a shorter line behind the middle; the 5th has a line before and another behind the middle; the 6th has two lines as the 5th; the 8th a line before the middle; the 9th has a line before the middle and another near the apex.

The undersurface of the body is brown-red, impunctate, shining; the metasternum and the two basal segments of

the abdomen are hardly furrowed; the last abdominal segment is fringed with golden hairs.

The anterior legs stout, with the tibiæ angularly dilated in the middle, all the femora are toothed, the tarsi pubescent.

This *Orychodes* belongs to the group formed by *O. lineolatus* Kirsch¹⁾, *insignis* Lewis²⁾ and *pictus* Pascoe³⁾, which have the head posteriorly unspined; it differs from *O. lineolatus*, by the rostrum and the lines on the elytra, from *O. insignis* and *pictus*, by the elytra being differently punctured and spotted.

I have much pleasure in dedicating this species to Mr. Ritsema, as a slight sign of friendship.

Achrionota bilineata Pascoe⁴⁾.

♀. Elongated, narrow, blackish, opaque; covered here and there with yellow-whitish scales. The apical portion of the rostrum is brown, shining, the neck pitchy, the legs ferruginous brown. The head is moderately elongate, deeply separated from the neck, with a shallow groove in the middle extending to the basal portion of the rostrum; above punctured, with a few scales at the sides, beneath almost entirely covered with ochreous scales; the basal portion of the rostrum is as long as the head but more slender, with two longitudinal furrows along the middle and vaguely punctured; the apical half is longer than the head, filiform, impunctate. The antennæ are scarcely longer than the rostrum, nearly filiform, with the first joint as long as the second and third together; the remainder subcylindrical and greyish pubescent with rare blackish hairs; the 11th as long as the basal joint and acuminate at the tip.

1) Mittheilungen a. d. k. zoologischen Museum zu Dresden, I Heft, p. 49. 1875.

2) Journal of Linn. Society, XVII, p. 301. 1883.

3) Journal of Entomology, I, p. 339. 1862.

4) Annals and Magazine of Natural History for November 1872, p. 325.

Prothorax similar in shape to that of the male, elongate, scarcely longer than the basal portion of the rostrum and head taken together, the sides are very convex; it is widest about the middle and strongly contracted at the apex; along the middle furrowed; the longitudinal impression is covered with yellow-whitish scales, forming at the sides two lines which are slightly curved inwards; laterally the scales are scattered here and there, beneath very numerous.

The elytra are as long as $2\frac{1}{2}$ the prothorax, subparallel at the sides; at the apex sinuated and the angles with a spine slightly curved inwards. Above the elytra are regularly subsulcate-punctate and bear along the suture two lines of yellow-whitish scales; moreover minute scales are in the 3rd and 9th furrows at the base and at the apex. Metasternum and the two basal segments of the abdomen ashy, irregularly punctured; the last abdominal segments and the sides have numerous scales. Legs slender, with scattered small yellow-whitish scales.

Length 19 mill., breadth of the prothorax 2 mill.

Hab. Borneo: Sarawak. (My collection).

Prophthalmus planipennis Pascoe ¹⁾.

♀. Black, more or less shining. Head short, transverse, irregularly punctured: the posterior angles moderately produced, rounded, above and beneath at the base emarginate, deeply separated from the neck, the undersurface is roughly punctate, slightly pubescent. Rostrum shorter than the prothorax, the basal portion shorter than the head and furrowed, the apical half filiform, conspicuously curved and furrowed; beneath bisulcate and moderately punctured; antennæ as in the male.

Prothorax similar in shape to that of the male, but less flattened in the middle; shining, rarely subshining. In the elytra, the declivity at the sides, the furrows and

1) *Annals and Magazine of Natural History* for November 1872, p. 322.

interstices are as in the ♂, but I have in my collection a female with the elytra and the prothorax proportionately narrower; the second yellow line on the elytra is sometimes interrupted in the middle.

The undersurface of the body shining; metasternum and the two basal segments of the abdomen obsoletely canaliculate, the apical segment margined with fine hairs. Femora toothed, internally the basal half pubescent.

Length 13 to 21 mill., breadth of the prothorax $2\frac{1}{2}$ to $4\frac{1}{2}$ mill.

Hab. Malacca and Batchian. (My collection).

Miolispa Mariæ, n. sp.

Robusta, nigro-ænea, nitida, capite thoraceque sulcatis, crebre punctatis, elytris nigro-brunneis, prope suturam vitta ferruginea, apicibus castaneo marginatis, dorso striato-punctatis, lateribus subcancellatis; pedibus nigro-brunneis. — Long. $8\frac{1}{2}$ mill., latit. thoracis $1\frac{3}{4}$ mill., ♂.

Hab. Penang. (Coll. Senna).

This fine and conspicuous species is allied to *M. puncticollis* Boisd.¹⁾ but easily distinguishable by its robustness, by the head and the apical portion of the prothorax clearly punctured, moreover by the shape of the prothorax. Head nearly square, slightly longer than broad, convex on the vertex, in the middle furrowed, at the base strongly emarginate, irregularly punctured; between the eyes trisulcate, the lateral impressions broader than the central one; beneath convex, shining, very finely punctured. Rostrum robust, as long as $1\frac{1}{3}$ the head, moderately curved; the basal portion as long as the apical one, trisulcate, the sides parallel; the anterior portion widened at the apex which is smooth, emarginate and finely punctured; the intermediate furrow extending almost to the end of the rostrum;

1) Voyage de l'Astrolabe, II, p. 312; sub *Orychodes* in Gemminger and von Harold, Catal. Coleopt.

mandibles small, exserted; beneath with a distinct longitudinal keel in the middle, near the antennæ and in the apical half distinctly punctured. Antennæ short, not so long as head and prothorax taken together, the basal joint short, equal in length to the 2nd and 3rd together, the 2nd joint shaped as in *M. suturalis*, the 3rd, 4th and 5th moniliform; the 6th, 7th and 8th transverse, the remainder three joints conspicuously larger and perfoliate.

Prothorax nearly as long as broad, ovate, near the apex angularly contracted, with the sides rounded and the base transversely furrowed; above and at the sides irregularly but densely punctate, the punctures very numerous laterally.

The elytra are sinuate at the base, as long as twice the prothorax and equal in broadness; the sides are subparallel, near the apex attenuated, the apex is truncated with the marginal portion turned upward; above punctate-striate, the inner furrow impunctate, the 2nd and 3rd near the suture punctured, the remainder uniformly and deeply punctate, the interstices raised, convex; dark-brown, the 3rd interstice ferruginous, the portion along the suture ferruginous-brown, the apical margin red-brown.

The undersurface of the body is dark-brown, shining; metasternum densely punctate and with a central furrow; the two basal segments of the abdomen with a few very fine punctures, the second only sulcate in the middle; the remainder segments short and sloping rapidly. Legs short, dark-brown, the femora are clavate, brown-red in the middle, finely punctured, at the apex densely punctate; tibiæ short, strongly punctured, dark brown-red in the middle, tarsi pubescent.

I have dedicated this new species to Miss Maria Magnaghi.
Pavia. Laboratory of Zoology of the University, June 1891.

NOTE XXI.

GENRE NOUVEAU ET ESPÈCES NOUVELLES DU
GROUPE DES OXYOPISTHEN

DÉCRITS PAR

W. ROELOFS.

Mr. Neervoort van de Poll vient de recevoir parmi des Coléoptères de la côte ouest de l'Afrique, un certain nombre d'espèces du genre *Oxyopisthen* et genres voisins. J'en ai entrepris la description, comme suite aux quelques nouvelles espèces du Musée de Leyde, publiées récemment dans les »Notes''. (Vide antea p. 116).

Notre connaissance du groupe se trouve beaucoup avancée par ces nouvelles espèces; toutes celles qui appartiennent à l'ancien genre *Oxyopisthen* Thomson, ont le prothorax sans prolongement à la base et se rapprochent par cela du *rufofemoratum* de Thomson; toutes ont le faciès habituel du genre et sont plus ou moins parallèles sur les côtés et linéaires, sauf une espèce (*O. scalaris* Roel.) qui est élargie aux épaules des élytres et présente par conséquent une forme plus ovale.

Mr. Aurivillius n'avait connue que le ♂ de son *Haplorhynchus Valdaui*; Mr. van de Poll vient de recevoir de plus deux individus de l'autre sexe. La connaissance de la ♀ offre un grand intérêt par ses caractères insolites et sa grande différence du ♂.

Le nouveau genre, que je décris sous le nom de *Acherus*, est un des plus curieux dans la série des Curculionides, et offre dans la famille un nouvel exemple de l'absence du dernier et de la forme non bifide de l'avant dernier article

Notes from the Leyden Museum, Vol. XIII.

des tarses. Son rostre, qui se rapproche de celui de la ♀ du *Haplorhynchus Valdaui*, est également d'une construction remarquable. Malheureusement nous n'en connaissons jusqu'à présent qu'un des deux sexes (la femelle?) de la seule espèce connue du genre.

Oxyopisthen nitidum, n. sp.

Subparallèle, noir luisant, avec trois taches blanches sur les côtés du corps, élytres transversalement déprimées, striées-ponctuées, pygidium horizontal, très pointu. — Long. 13 mill., rostr. excl.

Très voisine du *Büttikoferi* Roel. et de la même taille, d'un noir luisant, rostre et antennes d'un noir-brunâtre, une tache sur le mésosternum devant l'épaule des élytres, une tache allongée sur le métasternum contre le bord de l'élytre, une troisième sur le premier segment de l'abdomen à la même place, blanches.

Rostre de la longueur du prothorax, légèrement arqué, muni d'une ligne obsolète vers la base. Tête à peine ponctuée.

Prothorax un peu plus long que large, ses côtés faiblement arrondis, peu rétréci en avant, la base un peu arrondie, son disque un peu déprimé, couvert d'une ponctuation grosse et serrée, muni d'une courte et fine ligne imprimée au milieu. Ecusson allongé, ses côtés parallèles, arrondi au bout.

Elytres à peine plus larges que le prothorax, graduellement rétrécies vers le bout, droites sur les côtés, garnies de stries dont les intérieures ont des points confluent, les extérieures des points plus arrondis. Les élytres sont planes, transversalement déprimées derrière la base et offrent deux dépressions vers le milieu.

Le pygidium, subhorizontal, est en triangle aigu, muni d'une carène médiane, finissant en pointe à l'extrémité, comprimé latéralement, ses côtés costiformes; sa ponctuation est forte et plus serrée à la base.

Dessous du corps luisant, à peine ponctué, extrémité

du dernier segment avec des points assez gros et serrés. Métasternum ayant une impression au bout, ainsi que la base du premier segment de l'abdomen. Le dernier segment porte au bout une impression transversale, l'extrémité du pygidium en dessous en forme de fer de lance.

Les quatre cuisses antérieures ont une petite dent vers le milieu, les postérieures une dent vers le tiers terminal; elles sont un peu sinueuses, courbées vers le haut et atteignent le cinquième segment abdominal.

L'unique individu que j'ai sous les yeux me paraît un ♂ d'après l'insertion des antennes. — L'espèce est très voisine du *Büttikoferi* Roel., elle s'en distingue surtout par les taches blanches sur les côtés du corps; le prothorax est moins densément ponctué, plus rétréci en avant, le pygidium plus comprimé, etc.

Hab. Le Gabon.

Oxyopisthen clavatum, n. sp.

De la forme du *rufofemoratum* Thoms., mais d'une taille plus grande.

Noir luisant; les quatre pattes de devant, sauf l'extrémité des cuisses et les tarses, ainsi que les cuisses postérieures rouges; la massue des antennes, sauf sa tranche terminale, d'un rouge jaunâtre; quelquefois avec des taches blanches sur les côtés du corps. — Long. 16 à 17 mill., rostr. excl.

Rostre de la longueur du prothorax, d'un noir mat, un peu épaissi à sa base, qui porte une faible ligne imprimée; il est muni plus en avant, d'une carène peu élevée. Antennes insérées à sa base, leur scape de la longueur du funicule, la massue grande, d'une forme un peu carrée, sa surface comme ondulée, elle est d'un brun-jaunâtre, son extrémité noire. Tête finement ponctuée, avec une impression entre les yeux.

Prothorax déprimé sur le disque, très faiblement arrondi sur les côtés, peu rétréci en avant, sa base faiblement

Notes from the Leyden Museum, Vol. XIII.

arrondie; il est garni d'une ponctuation grosse et très serrée vers la base. Une dépression se remarque au dessus des épaules. Ecusson longuement ovale.

Elytres à peine plus larges que le prothorax, droites sur les côtés, rétrécies en arrière, transversalement déprimées derrière la base et au milieu du dos; garnies de stries à points confluents et plus gros dans les stries latérales.

Pygidium déclive selon une ligne courbe, comprimé latéralement et relevé à l'extrémité, qui porte une carène médiane et dont les bords sont un peu élevés. Le pygidium est garni d'une ponctuation très grosse et confluyente vers le bout.

Le métasternum est lisse sur les côtés, ponctué en avant, très lisse dans une excavation en arrière, qui se continue de la même façon sur le premier segment abdominal; le reste de l'abdomen est ponctué.

Les quatre cuisses antérieures ont une petite dent un peu en dessous de leur milieu et sont garnies de poils courts brunâtres de la base jusqu'à cette place. Les cuisses postérieures sont droites, atteignent le pygidium et ont une petite dent près de leur extrémité; des poils les garnissent de la même façon que dans les cuisses antérieures. Les tibias postérieures sont un peu comprimées et triangulairement élargies pas loin de leur base.

Trois individus du Gabon, dont je ne saurais déterminer le sexe et dans lesquels je ne découvre pas de différence sexuelle; dans un des trois on remarque une petite tache blanche sur les côtés du métasternum et une seconde sur les bords du premier segment abdominal; dans un autre individu il ne reste qu'un vestige de la seconde tache; le 3^e n'en a pas du tout. Ces taches paraissent par conséquent peu constantes.

Oxyopisthen suturale, n. sp.

D'une forme plus large et plus ovale que les autres espèces du genre; d'un noir mat, velouté, décoré d'une bande

Notes from the Leyden Museum, Vol. XIII.

blanche latérale sur le prothorax qui se continue sur les côtés du corps, une ligne étroite blanche sur la base du prothorax se continue sur l'écusson et couvre la suture des élytres jusqu'à leur moitié. — Long. 8 à 15 mill., rostr. excl.

Rostre environ de la longueur du prothorax (♂) ou plus long que lui (♀), de la même grosseur partout, peu arqué, d'un noir un peu luisant, avec une ligne imprimée peu marquée à la base. Antennes assez longues, leur scape de la longueur du funicule. Tête obsolètement ponctuée, munie d'une impression allongée entre les yeux.

Prothorax en triangle tronqué, un peu plus long que large; ses côtés très faiblement arrondis, sa base un peu avancée en lobe au dessus de l'écusson, un peu échancrée au dessus de chaque élytre. Il est garni d'une ponctuation superficielle, en grande partie cachée par l'enduit qui le couvre, ses côtés sont décorés d'une bande blanche, s'élargissant en arrière au dessus de l'épaule, une ligne étroite blanche médiane n'atteint pas son bord antérieur et va jusqu'à la base. L'écusson est cordiforme, blanc et finement bordé de noir sur les côtés.

Elytres un peu plus larges que le prothorax, ovales, arrondies au bout, garnies de fines stries ponctuées peu apparentes, décorées sur la suture d'une ligne blanche jusqu'à leur moitié.

Pygidium du mâle court, triangulaire, peu déclive, muni d'une carène médiane et entouré d'un rebord élevé; une ponctuation obsolète se voit sous l'enduit blanc qui le couvre. Le pygidium de la femelle est prolongé dans une pointe obtuse, un peu relevée, et porte une bordure de poils bruns.

Prosternum et côtés du corps d'un noir mat, portant une ponctuation dense, superficielle, remplie d'enduit blanchâtre. Une bande blanche décore les côtés du mésosternum, du métasternum et des premiers segments de l'abdomen, et s'élargit sur les derniers, couvrant l'extrémité. Le milieu du prosternum et du mésosternum sont blancs. Le métasternum est évasé, luisant et ponctué (♂), ou garni d'une pu-

bescence brune (♀); la dépression se continue sur le premier segment abdominal.

La pointe saillante du pygidium de la femelle est garnie en dessous d'une pubescence brune.

Les pattes sont longues et assez faibles, couvertes d'une ponctuation superficielle et remplie d'un enduit blanchâtre, qui couvre plus densément la tranche supérieure des cuisses. Les cuisses droites, inermes, les postérieures atteignent presque le bout du pygidium; les quatre cuisses antérieures sont garnies de poils bruns chez la femelle.

Hab. Le Gabon. — Deux mâles et trois femelles.

Haplorhynchus Valdaui Auriv. ♀.

Mr. Aurivillius a créé et décrit (Entom. Tidskrift, årg. 7 (1886) pag. 95) le genre *Haplorhynchus*, pour une espèce (*Valdaui* Auriv.) dont il n'a connu que le ♂.

Mr. Neervoort van de Poll possède, avec un individu mâle, deux individus femelles de cette espèce. La ♀ diffère beaucoup du ♂, et sa connaissance nécessitera, par cette raison, quelques modifications dans la détermination du genre.

Voici les caractères de la ♀ :

Taille très supérieure à celle du ♂ (17 à 18 mill., rostr. excl.). Rostre séparé du front par une légère dépression, très robuste, épaissi à sa base, fortement aminci vers l'extrémité, brusquement courbé et finissant dans un petit prolongement sous la bouche; le rostre est garni en dessous de rangs de brosses raides de couleur brune, laissant un espace libre entre eux et qui s'étendent de la place de l'insertion des antennes (vers son tiers postérieur) jusqu'à l'angle du prolongement au bout, ses côtés portent une rainure s'étendant de l'insertion des antennes jusque près de son extrémité; il est d'un noir velouté, plus ou moins garni d'un enduit blanchâtre.

Le scape des antennes est plus court que chez le ♂ et que le funicule.

Les hanches antérieures sont saillantes, grosses, et pré-

Notes from the Leyden Museum, Vol. XIII.

sentent en dessous une tranche aigue, un peu courbée en avant.

Le pygidium est moins pointu que celui du ♂, son impression en dessous ovale, peu profonde.

Deux individus du Gabon.

Les caractères énumérés sont aussi remarquables par eux-mêmes que par leur différence avec ceux de l'autre sexe. La construction du rostre et la forme des hanches antérieures sont surtout dignes de remarque.

La forme de la ♀ et sa grande différence avec le ♂ font du genre *Haplorhynchus* et de l'espèce qui nous occupe, un des Curculionides les plus intéressants.

Acherus, n. g.

Corps étroit, linéaire; rostre légèrement arqué, paraissant, par la courbe plus forte du dessous, comme évasé, garni de brosses de poils sur la tranche inférieure, qui finit en avant par une protubérance triangulaire (♀ ?).

Antennes insérées près de sa base, droites, le scape ayant à peine un quart de leur longueur totale, 1^r article du funicule plus gros que les autres, 2^e plus long que les suivants, partie spongieuse de la massue non saillante.

Prothorax long, faiblement arrondi à la base.

Ecusson petit, allongé.

Pygidium peu déclive, latéralement comprimé, épais.

Les deux premiers segments de l'abdomen grands, séparés par une suture superficielle, les deux suivants réunis moins longs qu'un des précédents.

Cuisses faiblement dentées, le 3^e article des tarse ar-rondi ¹⁾, le 4^e absent.

L'absence totale du quatrième article des tarse et par conséquent des crochets, la forme non échancrée du 3^e article, ainsi que la construction du rostre (dans le sexe connu), constituent les caractères saillants et remarquables de ce

1) La tranche antérieure présente une échancrure à peine visible.

genre. Ne connaissant qu'un individu unique et par conséquent qu'une seule espèce du genre, je ne saurais décider avec certitude, à quel sexe appartient l'insecte que j'ai sous les yeux. Jugeant d'après l'insertion des antennes, qui est un peu éloignée de la base du rostre comme chez les femelles de ce groupe, ainsi que par analogie avec la forme du rostre chez la femelle du *Haplorhynchus Valdaui*, je crois qu'il appartient au même sexe; le rostre du ♂ est très probablement différent et son pygidium présente sans doute quelques différences sexuelles.

Acherus nigricans, n. sp.

D'un noir mat, couvert d'un enduit blanchâtre dans la ponctuation; rostre garni en dessous de brosses brunes, avec une protubérance en dessous. Prothorax allongé, portant une ponctuation superficielle. Elytres avec des stries finement ponctuées. — Long. 11 mill., rostr. excl.

Rostre moins long que le prothorax, légèrement arqué, couvert d'une ponctuation obsolète et longitudinalement confluyente, garni à la base d'une ligne imprimée assez profonde; il est en outre longitudinalement imprimé au dessus de la bouche, son dessous comme excavé par une courbe plus forte que la ligne du dessus, la partie concave s'étendant jusqu'à une saillie triangulaire, surmontée par une petite protubérance. Cette protubérance, située près de l'extrémité du rostre, est d'un noir luisant, comme le bout de ce dernier. Des rangées de brosses raides, courtes, de couleur brune, s'étendent de la place de l'insertion des antennes jusqu'à la protubérance. Les côtés du rostre portent une rainure, allant de l'insertion antennaire jusqu'au bout. Tête obsolètement ponctuée.

Prothorax presque du double plus long que large, peu rétréci en avant, très faiblement arrondi sur les côtés et à sa base, un peu aplati et inégal sur le disque, garni d'une ponctuation très superficielle, assez grosse et serrée, remplie d'un enduit blanchâtre. Ecusson très petit, déprimé.

Notes from the Leyden Museum, Vol. XIII.

Elytres de la longueur du prothorax, pas plus larges que lui, droites sur les côtés, se rétrécissant seulement en arrière, tronquées à l'extrémité, leur surface un peu déprimée, garnies de stries très fines composées de points confluent, plus allongés au milieu du dos, plus ronds sur les côtés; la 10^e strie est complète; les intervalles des stries finement ponctués.

Le pygidium est latéralement comprimé, muni d'une carène obtuse et couvert d'une ponctuation assez grosse et plus serrée à la base. Ces points portent de petits poils blanchâtres ¹⁾.

La ponctuation du métasternum et des deux premiers segments de l'abdomen est plus forte que celle des derniers segments; elle est remplie, comme celle qui couvre les jambes, de petits cils ou poils blanchâtres. Les côtés du mésosternum et du métasternum sont garnis d'une fine pubescence blanchâtre. Le prosternum offre, avant les hanches antérieures, un espace garni de pubescence brune. Le premier segment de l'abdomen offre une impression profonde longitudinale, continuée sur la base du second segment, le dernier segment de l'abdomen est muni d'une impression triangulaire, allongée, s'élargissant en arrière. Les quatre cuisses antérieures sont obsolètement dentées, un peu plus bas que leur milieu; la paire postérieure possède une dent un peu plus grande vers son tiers terminal. Des poils courts, bruns, garnissent la tranche inférieure des quatre cuisses antérieures, de la base jusqu'à la petite dent. Les jambes ont de petites côtes élevées.

Hab. Le Gabon. — Un seul individu.

La Haye, Juin 1891.

1) Le pygidium est d'une forme différente de celui des *Oxyopisthen*, surtout par sa plus grande hauteur, de façon à lui donner, réuni au dernier segment et vu de côté, l'apparence d'une lame à pointe obtuse.

NOTE XXII.

ON ENGRAULIS JAPONICUS SCHLEGEL

BY

Dr. C. L. REUVENS.

June 1891.

In his 'Catalogue of Fishes', Vol. VII, 1868, p. 387, Dr. Günther says, that he agrees with Valenciennes ¹⁾ in the opinion, that *Engraulis japonicus* Schlegel (Fauna Japonica, 1850, Pisces, p. 239, tab. CVIII, fig. 3) should be identical with *E. ringens* Jenyns (Voyage of the Beagle, 1842, Fishes, p. 136). On p. 390 of the same volume the author mentions *Atherina japonica* Houttuijn, with *E. commersonianus* Richards. as synonyme.

E. ringens is found at the Pacific coast of America, *E. japonicus* Schleg. in the Japanese seas; yet Günther considers it not a very extraordinary fact, that a same species should occur on these two widely separated coasts. As the author, in 1880, described the shore-fishes of the Challenger-expedition (Chall. exped., 1880, Zoology, Vol. I, pt. VI, p. 72), he named the specimens from the Chinese coasts, mentioned in his Catalogue under the name *E. japonica*, *E. chinensis* and uttered his opinion, that *A. japonica* Houttuijn should be identical with *E. japonicus* Schleg. According to Günther's opinion on p. 387 (Cat. of Fishes, Vol. VII, 1868) *E. japonicus* Schleg. is = *E. ringens*, therefore we should have the following two species:

1) Cuvier et Valenciennes, Histoire naturelle des Poissons, 4^o. T. XXI, p. 20.

- a. *E. ringens* Jenyns (Günther, Cat. of Fishes, Vol. VII, 1868, p. 386) s. *E. japonicus* Schleg. s. *A. japonica* Houttuijn.

Diagnostic: The height of the body is one-fifth of the total length (without caudal), the length of the head a little less than one-third; sides and lower parts silvery, back dark-coloured; D. 14—15, A. 19—22. Japan, Pacific coast of America.

- b. *E. chinensis* Gthr. (Chall. exped., 1880, Zoology, T. I, pt. VI, p. 72) s. *E. commersonianus* Richards. (Ichth. Chin., 1845, p. 308, not Lacép.).

Diagnostic: The height of the body is one-fifth of the total length (without caudal), the length of the head two-ninths; a well-defined silvery band runs along the side; D. 17, A. 22. China.

Studying Engraulinae in the Leyden Museum, I found a bottle from Dr. Bleeker's collection ¹⁾ (Catalogue des Collections formées et laissées par M. P. Bleeker, 1879, p. 46, n°. 74) with superscription: **Stolephorus japonicus* Schleg. 2. According to the asterisk, the specimens should be in bad condition. Examining the bottle, I saw there were 3 specimens, two of them, very damaged, belonging to one and the same, the third, entirely unimpaired, to quite another species ²⁾. After a careful examination the latter (without a silvery band) proved to be *E. japonicus* Schleg., the first two (with a silvery band) will probably be identical with Günther's *E. chinensis*.

Comparing the descriptions of *E. ringens* Jenyns, *E. japonicus* Schleg., *A. japonica* Houttuijn ³⁾, and *E. chinensis* Gthr. with the specimens in the Leyden Museum, I must conclude that they belong to three species with the following short diagnostics:

1) When in 1879 Dr. Bleeker's collections were sold by auction, the Leyden Museum purchased „Collection A”, containing among all other species, the types of Bleeker.

2) This specimen is probably put in the bottle, after the latter has come in the Museum; the true locality, where it is found, is unknown.

3) Houttuijn says that his *Atherina japonica* has a well-defined silvery band.

- a. *E. ringens* Jenyns (Günther, Cat. of Fishes, 1868, Vol. VII, p. 386, neither Schlegel, nor Bleeker).

Diagnostic: see above. Pacific coast of America.

- b. *E. chinensis* Gthr. (Chall. exped., 1880, Zoology, T. I, pt. VI, p. 72) s. *E. commersonianus* Richards. (Ichth. Chin., 1845, p. 308, not Lacép.) s. *Atherina japonica* Houttuyn (Verh. Holl. Maatsch. Wet. Haarlem, XX, 2, 1781, p. 340).

Diagnostic: see above. China.

- c. *E. japonicus* Schleg. (Fauna Japonica, 1850, Pisces, p. 239, tab. CVIII, fig. 3).

Diagnostic: The height of the body is one-seventh of the total length (without caudal), the length of the head a little less than one-fourth; sides and lower parts silvery, back dark-coloured; D. 13—14, A. 18. Japan.

I believe this comparison will sufficiently show the distinctness of the above mentioned three species.

NOTE XXIII.

UEBER EINE NEUE POLYPTERUS-ART
AUS LIBERIA

VON

Dr. F. STEINDACHNER,

Director der zoologischen Abtheilung des k. k. Hofmuseums in Wien.

Bei einer vorläufigen Untersuchung der durch Herrn Büttikofer und seine Gefährten in Liberia gesammelten Fische fand sich eine *Polypterus*-Art, die ich für neu halte und vorläufig hier kurz beschreibe. Zu Ehren des Reisenden, der sie zuerst gefunden und herübergesandt, nenne ich dieselbe

Polypterus büttikoferi.

Char. Habitus wie bei *P. senegalus* Cuv. Kopflänge 6— $6\frac{3}{4}$ mal bei Exemplaren von $16\frac{1}{2}$ —26 Cm. Länge, $5\frac{1}{2}$ — $5\frac{3}{5}$ mal bei jungen Individuen von 10—11 Cm. Länge in der Totallänge, Kopfbreite $1\frac{1}{5}$ — $1\frac{3}{4}$ mal, Schnauzenlänge $4\frac{1}{4}$ — $4\frac{1}{2}$ mal, Augendiameter $6\frac{2}{3}$ —9 mal, Stirnbreite $3\frac{3}{4}$ —nahezu 4 mal, Kopfhöhe $2\frac{1}{3}$ —2 mal in der Kopflänge enthalten.

7—8 Flösselchen in der Dorsale, 23—27 Schuppen vor der Dorsale, welche letztere stets um eine Kopflänge hinter dem hinteren Rande der Pectorale beginnt. 11—12 Schuppen zwischen der Einlenkungsstelle der Ventrals und der Dorsale in einer verticalen Linie, 33—34 unmittelbar vor dem Beginn der Dorsale und der Bauchlinie, 53—55 Schuppen längs der Seitenlinie. P. 35—36. A. 13—15. V. 11—12. Untere Körperhälfte gelb oder bräunlich gelb,

Notes from the Leyden Museum, Vol. XIII.

obere bei jungen Individuen gelblich, mit zahlreichen violetten, schräge nach hinten ziehenden Querbinden; bei alten Individuen ist die Grundfarbe des Rückens hell oder dunkel grauviolett, daher die dunkleren Querbinden meist nur schwach hervortreten. Bei zwei älteren Exemplaren ist die ganze Rückenseite (mit Einschluss des Kopfes) gelb gesprenkelt.

Fundorte: Mahfa River im Sumpfe, Sumpfbach bei Buluma, Sumpf bei Juring am Solymah River. (Reichs Museum in Leiden).

Wien, 30 Juni 1891.

NOTE XXIV.
ON THE CEYLON CETONIIDAE COLLECTED
BY J. Z. KANNEGIETER

BY

J. R. H. NEERVOORT van de POLL

AND

J. Z. KANNEGIETER

The list of Cetoniidae enumerated hereafter is the result of an entomological trip made during the months April and May 1889. The collections, which are in the possession of Mr. Neervoort van de Poll, are chiefly made in the following localities, viz. Belihul-Oya on the southern slopes of the central mountains; Wadduwa near the coast, south of Colombo; Nalanda on the way to Trincomalee, on the northern slopes of the central mountains, whilst several of the more common insects were obtained in the immediate vicinity of Colombo.

Generally Cetoniidae are insects of rare occurrence on flowers and foliage. The common *Glycyphana versicolor* F., however, was taken very abundantly by native boys in the ancient cinnamon gardens near Colombo.

In order to render this paper as useful as possible, all the species hitherto authentically recorded or described from Ceylon, but not met with by Mr. Kannegieter, are incorporated in this list and printed in brackets.

As for our collaboration, it may be noticed to avoid confusion, that new species or varieties are always marked with our respective names.

Notes from the Leyden Museum, Vol. XIII.

***Coryphocera elegans* F.**

Belihul-Oya; Wadduwa; Colombo.

Not rare.

var. *cyanoptera* Westw.

Belihul-Oya; Nalanda; Colombo.

Scarce.

var. *fulgidissima* Kanneg.

North from Nalanda.

Four specimens of this splendid variety were taken by a native collector.

They are entirely of a deep brilliant fiery red colour, with the black markings of the typical form. As the blue and the black colour-varieties of *elegans* have got already a name, I thought it best to bestow also a name on the red form, although I am no protector of naming such varieties of complementary colours, which exist — and may be named in advance — of all these emerald-green species.

***Clinteria imperialis* Payk.**

Belihul-Oya; Colombo.

Not rare.

[var. *incerta* Parry].

***Clinteria chloronota* Blanch.**

Belihul-Oya; Wadduwa; Colombo.

I found this species rather abundantly at Belihul-Oya on foliage bordering a brook. Blanchard describes the prothorax with six white punctures without making mention of the position of these spots. The number of spots is very variable; the form with unspotted thorax is not rare, usually there are on the disc in front two . . , three . . , four . . or five . . white punctures — sometimes the

Notes from the Leyden Museum, Vol. XIII.

central one is replaced by a short longitudinal stripe — the form with six spots is very rare and then the sixth one is placed on the basal lobe. I got one specimen with two discal punctures, a central line and a large guttiform spot on the lobe, not unlike the common form of *Cl. confinis* Kirby.

[*Clinteria rufipennis* Jans.].

The Entomologist. Vol. XXII (1886), p. 100.

Clinteria coerulea Hbst.

Not at all rare in the vicinity of Colombo. Among the extensive series collected, there is not a single coeruleous specimen, they are all metallic or bronze green, a few cupreous. A comparison with some specimens, originating from old collections, and with no more peculiar indication of localities than "India or." offers some differences in general aspect and sculpture which could lead to regard the Ceylon form as a distinct race when having sufficient material of authentic specimens from the continent.

Specimens without spots on the thorax are scarce, generally there is a rather large white puncture near the middle of the sides and very often still a smaller one may be observed more in front.

The elytra have no less than eight spots on each, moreover the tip of the scutellum is bordered with white.

var. *megaspilota* Kanneg.

North from Nalanda, my native collector captured three male specimens of a quite distinct looking large variety of *coerulea* Hbst.; it is much more robust in all its dimensions, the white spots have exactly the same position but are very large, the thorax is ornated with four spots, the mesosternal process is rather less produced.

***Clinteria pumila* Swtz.**

Nalanda.

In the Munich Catalogue *Clinteria pumila* Swartz is placed as a variety of *Cl. coerulea* Hbst.; now there is among the Ceylon Cetoniidae a *Clinteria*-species allied to but quite distinct from *coerulea* Hbst., which I feel strongly inclined to regard as the true *pumila*, although neither Swartz's description nor Burmeister's redescription are sufficiently complete to prevent every doubt, I therefore consider it useful to give a full description of this Ceylon insect.

♀. Shining, dark cupreous, under surface, pygidium and tarsi almost black with strong cupreous reflexions.

Head coarsely punctured, somewhat convex in the middle, with four small impressions, two near the insertion of the antennae and two along the sides of the clypeus; clypeus rather broad, slightly elevated laterally, front margin moderately emarginate, with the lobes broadly rounded and narrowly reflexed.

Prothorax feebly angular in the middle, very narrowly margined along the sides, with an irregular impression filled with white pubescence about the middle; deeply but rather distantly punctured all over. The disc in front with two hardly perceptible white punctures.

Elytra broad, but very little narrowed posteriorly, broadly rounded at the tip, obtuse at the suture, with seven rows of large angular punctures on each, and a few small scattered punctures along the sides, sutural costae and the 3rd, 5th, and 7th interstice — the latter but very short — strongly raised; ornated with numerous white spots, eleven on each wingcase, placed exactly as in *Cl. chloronota* Blanch.

Pygidium finely rugosely striated, clothed with a fulvous pile. Underneath with the sides of the breast strigose, sides of the abdomen roughly punctured, mesosternal process obtusely produced, anterior tibiae with two strong

Notes from the Leyden Museum, Vol. XIII.

lateral teeth, legs and breast covered with a sparse fulvous pubescence.

The colour does not agree with the description of Swartz, but this, as well as slight modifications of the white markings, I consider of subordinate value, and the principal characters, viz. the strongly punctured prothorax, and the pygidium without spots, are present in this Ceylon Cetoniid. (van de Poll).

[*Agestrata nigrita* F.].

***Thaumastopeus ceylonicus* v. d. Poll, n. sp.**

Nitid black. Head longitudinally depressed at the sides, slightly convex in the middle. The emargination in front deep and triangular, the lobes produced and somewhat acute, smooth on the vertex, coarsely punctured laterally.

Thorax moderately convex, anterior margin slightly produced over the head, sides somewhat angular in the middle and narrowly margined, posterior lobe broad, triangular, truncated at the tip; disc smooth, at the sides (chiefly in front) with a few deep irregular punctures and scratches.

Scutellum acute, impressed at the tip.

Elytra moderately convex, strongly depressed at the suture near the scutellum, sutural costae sharply elevated posteriorly, terminating in an acute point, the disc with several regular rows of deeply impressed large horse-shoe shaped punctures, the two innermost rows on each obliterated above near the suture, the sides and the apex closely striated.

Pygidium transversely convex, impressed in the middle, very finely and densely strigose. Underneath covered with very deep and irregular punctures, prosternum and sides of the abdomen strigose, all the ventral segments with irregular transverse rows of circular and semi-circular punctures; mesosternal process long, subcylindrical, almost straight, obtusely pointed and slightly recurved at the apex; legs punctured and strigose, with short black hairs, anterior tibiae with two strong acute lateral teeth.

Notes from the Leyden Museum, Vol. XIII.

The male is rather narrower, with the elytral sculpture much obliterated on the disc; the pygidium still more densely strigose along the middle, the mesosternal process somewhat bent downwards, the sculpture of the whole under surface shallower.

Length 25—28 mm., breadth at the shoulders $11\frac{1}{2}$ —13 mm.

Allied to *pulla* Billb. from the Himalayas, but differing greatly in its broader form — chiefly in the female sex — and in its very strong and regular punctuation of the elytra; moreover the forceps is very unlike that of any other *Thaumastopeus*-species I have examined.

Three females and one male taken at Belihul-Oya and near Colombo.

***Macronota quadrivittata* Schaum.**

I captured a single ♂ specimen, together with a female of the next following species, on flowers in the Botanical Garden at Peradenia.

***Macronota sculpticollis* Thoms.**

This species may be considered with great probability to be only the female sex of *M. quadrivittata*. Nine specimens examined proved to be all females, whilst sixteen specimens of *M. quadrivittata* invariably belonged to the male sex.

[*Macronota Halyi* Sharp].

The Ent. Mo. Mag. Vol. XXII (1886), p. 197.

***Glycyphana Horsfieldi* Hope.**

Belihul-Oya.

A few specimens.

***Glycyphana versicolor* F.**

Colombo.

Very abundant and exceedingly variable in colour and

Notes from the Leyden Museum, Vol. XIII.

markings. I may mention a very rare variety, a single specimen out of three or four hundreds, with a small white spot on each side at the base of the thorax.

***Protaetia regalis* Burm.**

Two specimens of this fine species were brought to me when at Colombo; they are entirely black instead of purple-coppery, and also smaller than the numerous specimens from the continent I have had for comparison.

[*Protaetia Whitehousei* Schaum].

***Protaetia alboguttata* Vigors.**

Nalanda; Colombo.

Three specimens only; they are all of a dark bluish-black colour. The individual from Colombo has a rather singular aspect, the elytral spots, with exception of the marginal one below the middle, being of much reduced size.

***Protaetia maculata* F.**

Colombo.

Not rare.

***Protaetia peregrina* Hbst.**

Colombo.

Several specimens.

***Anthracophora crucifera* Oliv.**

Belihul-Oya.

A few specimens.

[*Coenochilus taprobanicus* Westw.].

Thesaurus Ent. Oxon. 1874, p. 46, pl. XIII, fig. 8.

[*Valgus addendus* Walker].

This is probably only a synonym of *Valgus podicalis* Blanch.

Amsterdam, July 1891.

NOTE XXV.

SYNONYMICAL REMARKS ON CETONIIDAE

BY

J. R. H. NEERVOORT van de POLL.

1. *Lomaptera marginata* Kraatz (Deutsche Ent. Zeitschrift, 1890, p. 31) = *Lomaptera Duboulayi* Thoms. (Bull. Soc. Ent. de France. (5) VIII, 1878, p. cxxxviii; Aid to the Identification of Insects, plate 144, fig. 3).
2. *Cirrhospila flavo-maculata* Kraatz (l. c. p. 279, taf. II, fig. 14) = *Gnorimidia Toyae* Lansb. (Notes from the Leyden Mus. IX (1887), pp. 168 and 169).

NB. This insect is authentically recorded from the »Kodeicanel Mountains" near Madras, the locality »Java" given by Kraatz for it, will be just as erroneous as it is for *Melinospila (Macronota) flavo-maculata* G. & P., a species from Pondicherry, which Mr. Nonfried should have received, together with *G. Toyae*, from Java.

Amsterdam, July 1891.

NOTE XXVI.

A NEW SPECIES OF THE LONGICORN GENUS
NEOPHARSALIA v. d. POLL

BY

J. Z. KANNEGIETER.

Neopharsalia vagans, n. sp.

Head brown, covered with a thin greyish pubescence, the under-lobes of the eyes more thickly bordered with ochraceous pile, two oblique stripes of the same colour on the vertex; mandibles black; a fine central line along the middle, antennary tubers bluntly toothed at the innerside. Antennae very long and slender, the last 5 or 7 joints generally more or less incurvate, the scape of the colour of the head, the other joints becoming gradually paler, being only infusate at both the extremities.

Prothorax rather longer than wide, the sides produced into a pointed tooth in the middle; the front margin straight, the basal margin tri-sinuate, with a shallow straight transverse impression near the basal margin, and another strongly angular one in front; the disc with a short impressed central line (which, however, is quite obsolete in one specimen), and some large distant punctures; brown, clothed with a greyish tomentum, ornated with three irregular longitudinal ochraceous stripes, one in the middle, not quite extending to the base, and a somewhat broader one near the sides; a few small ochraceous spots may be observed below the central tooth.

Scutellum small, semi-circular, with a small ochraceous spot at the tip.

Notes from the Leyden Museum, Vol. XIII.

Elytra straight at the base, rounded at the shoulders, the sides slightly narrowing towards the apex, where they are truncate in an oblique direction towards the suture; covered with a deep punctuation, strongest and somewhat granular at the base, and gradually diminishing near the tip. Derm. brown, covered with a sparse greyish pile, or-nated with a few scattered ochraceous spots, chiefly near the shoulders, whilst the apical third is almost entirely occupied by more or less confluent spots of the same colour.

Under surface and legs pale brown, clothed with a fine greyish pubescence, on the abdominal segments some in-distinct ochraceous patches; mesosternum provided with a small obtuse knob.

The female differs only by the shorter antennae and the less attenuated elytra.

Length 14—15 mm., breadth at the shoulders 5—6 mm.— In Mus. van de Poll.

Allied to *N. Costeri* v. d. Poll, but much more slender, the elytra longer and less attenuated, the antennary tubers more strongly pointed at the innerside, the mesosternum slightly produced.

I captured a ♀ specimen at Pandan Aroem, an estate on the southern slopes of the Goenoeng Endoet in the Preanger districts (W. Java). Moreover I have had at my disposal two ♂ examples from Soekaranda: Langkat-Deli (E. Sumatra), and another male from South Borneo. Finally Mr. Neervoort van de Poll noticed the presence of specimens from Celebes in the Dresden Museum.

Amsterdam, July 1891.

NOTE XXVII.

QUATRE ESPÈCES NOUVELLES DE GYRINIDES
DU GENRE ORECTOGYRUS

DÉCRITES PAR

M. RÉGIMBART.*Orectogyrus sexualis*, n. sp.

Long. 7—8½ mill. — *Ovalis*, sat *elongatus*, fortiter *convexus*; *supra nitidissimus*, *viridi-aeneus*, leviter *cupreus*, *rufo-tomentosus*; *infra pallide testaceus*, *pedibus anterioribus nigro-variegatis*. *Labro semi-elliptico*, in *medio minime carinato nec laevi*. In *elytris spatio suturali laevi* ♂ *lato*, *postice longe et profunde bifido et medium attingente*, *subtilissime reticulato*, ♀ *latissime lanceolato et paululum ante apicem terminato*, *subtilissime quoque reticulato et praeter ad apicem tenuiter subundulatum striolato*; *costa laevi approximata*, sat *lata*, *postice obtusa*, ♀ *paulo longiore*, *ante truncaturam desinente*; *truncatura in medio fere recta*, *extus fortiter convexa et sinuata*, *angulo suturali recto*, *externo fortiter acuto*, *spinoso*. *Tibiis anterioribus*, praecipue *apud marem*, sat *robustis*, *marginem externo valde convexo*, *angulo externo fortiter rotundato*, *omnino deleto*.

Cette espèce bien caractérisée présente une très grande analogie avec l'*O. Leroyi* Rég., dont elle se distingue par sa forme moins trapue et plus allongée et sa couleur plus verte, en même temps que par la structure des espaces lisses. La couleur est en dessus d'un beau vert bronzé avec des reflets cuivreux sur le pronotum et la région suturale, en dessous d'un testacé pâle, avec les pattes antérieures

Notes from the Leyden Museum, Vol. XIII.

variées de noir. L'espace sutural lisse du mâle est assez large et divisé postérieurement depuis le milieu de sa longueur en deux lobes étroits dont la pointe ne dépasse pas le milieu de l'élytre; entre les lobes la ponctuation est plus rare et plus grosse; chez la femelle cet espace sutural est largement lancéolé, se termine un peu avant le sommet et en outre de la fine réticulation il est pourvu, sauf vers son sommet, de stries rugiformes serrées, peu profondes, un peu ondulées et légèrement obliques; la côte lisse en est très rapprochée, assez large, obtuse en arrière où elle se termine à peu près au même niveau que l'espace sutural chez la femelle; elle est un peu moins développée chez le mâle.

Le tibia antérieur a une structure remarquable: son bord externe est très convexe en dehors, avec l'angle externe très largement arrondi et entièrement effacé.

Hab. Libéria occidental; pris par Mr. A. T. Demery (Musée de Leyde).

Orectogyrus angularis, n. sp.

Long. $6\frac{1}{2}$ a $7\frac{1}{2}$ mill. — *Oblongo-ovalis, elongatus, valde convexus; supra metallicus, viridi-aeneus, purpurascens et iridescens, subtilissime reticulatus, griseo-tomentosus; infra omnino pallide testaceus, tibiis anticis ad basin et intus nigricantibus. Labro semi-elliptico, porrecto, fortiter punctato, in medio subcarinato et anguste laevi; pronoti regione tomentosa lata, in margine interno leviter undulata; in elytris sutura paululum elevata, ♂ antice tantummodo, ♀ fere usque ad apicem laevi, utrinque costa fere recta laevi, ♂ angustula et vix post medium prolongata, ♀ latiuscula et paulo ante apicem terminata; truncatura obliqua, fortiter convexa, extus sinuata, angulo apicali externo acuto, fortiter prominulo, suturali subacuto, praecipue apud feminam leviter spinose producto. Tibiis anterioribus sat robustis, extus ante apicem sinuatis, angulo apicali externo, praecipue apud marem, acuto et fortiter extus producto, tarso elongato flavo.*

Espèce très voisine de l'*O. cuprifer* Rég. et surtout de l'*O. Büttikoferi* Rég. Elle diffère du premier par sa forme

Notes from the Leyden Museum, Vol. XIII.

un peu plus allongée, par la couleur plus foncée et d'un pourpre plus bleu, par la pubescence moins argentée, par le labre plus allongé et développé, par la côte et la portion lisse de la suture plus larges et plus prolongées vers le sommet, par l'angle interne de la troncature plus aigu et subépineux, par l'angle externe du tibia antérieur qui est beaucoup plus aigu et saillant en dehors.

Elle se distingue du second, dont elle a la forme allongée et la couleur, par les deux derniers caractères, c'est à dire ceux des angles interne de la troncature et externe des tibias antérieurs et en même temps par la couleur noirâtre de la base et du bord interne des tibias antérieurs dans les deux sexes.

Hab. Libéria occidental; pris par Mr. A. T. Demery (Musée de Leyde).

Je serais très disposé à admettre que l'espèce actuelle et l'*O. Büttikoferi* n'en font qu'une seule; mais je ne pense pas qu'on puisse ne les considérer que comme des variétés de l'*O. cuprifer*; car tous les *O. cuprifer* très nombreux que j'avais d'Afrique occidentale, orientale ou méridionale sont bien semblables entre eux comme forme, couleur et sculpture; la variété *elongatus* Rég. seule se distingue par sa forme plus allongée et étroite, sa taille un peu plus petite et un peu plus d'ampleur dans les parties lisses.

Orectogyrus Demeryi, n. sp.

Long. $4\frac{1}{2}$ —5 mill. — *Ovalis, elongatus, convexus; supra nitidus, subtiliter reticulatus; viridi-aeneus, griseo-tomentosus, flavolimbatus; infra pallide testaceus. Labro semicirculari, fortiter punctato, antice laevi; prothoracis limbo luteo in medio intus triangulariter dilatato, margine tomentoso angustissimo, antice post oculos anguste dilatato; in elytris spatium suturali laevi communi lato, lanceolato, fere usque ad apicem prolongato, sat fortiter elevato, costa sublaterali latissime elevata, parallela, fere in truncatura desinente; truncatura fere recta, vix convexa, angulis leviter obtusis. Sculptura*

Notes from the Leyden Museum, Vol. XIII.

sexubus inter se similibus; ♂ tibiis anterioribus latis, ad basin attenuatis, angulo apicali externo recto, subprominulo; tarso angusto, elongato, omnino parallelo.

Charmante espèce, jusqu'ici la plus petite du genre, d'une belle couleur vert bronzé sans reflets cuivreux ni pourprés en dessus, d'un testacé très pâle en dessous, ainsi que sur les pattes. La bande jaune affecte sur le pronotum une forme triangulaire par sa dilatation interne, la bordure tomenteuse y est très étroite et se dilate en avant derrière les yeux. Sur les élytres l'espace lisse sutural commun est élevé, largement lancéolé, acuminé et se termine presque à l'angle sutural; la côte lisse, également élevée et située très en dehors, est très large, parallèle et se termine par une extrémité obtusément arrondie qui n'est séparée de la troncature que par une languette tomenteuse extrêmement étroite; la troncature est presque droite et à peine convexe, avec les deux angles un peu obtus, mais non effacés. Le tibia du mâle est assez large, subparallèle dans sa seconde moitié, très rétréci à la base, avec l'angle externe droit et presque saillant, le tarse est long, étroit et absolument parallèle. A part ces caractères sexuels des pattes, les deux sexes sont semblables.

Hab. Libéria occidental; pris par Mr. A. T. Demery (Musée de Leyde).

Orectogyrus Alluaudi Rég.

(Ann. Soc. Ent. France. Octobre 1889, p. 250).

Les exemplaires mâles recueillis par Mr. Demery à Cape Mount sont identique à ceux qu'avait pris Mr. Alluaud à Assinie; les femelles paraissent un peu plus allongées et l'espace lisse sutural commun est un peu plus atténué et à peine plus prolongé en arrière.

Orectogyrus discors, n. sp.

Long. $5\frac{1}{2}$ — $6\frac{1}{4}$ mill. — *Ovalis, valde elongatus, fortiter convexus; supra nitidissimus, subtilissime reticulatus, nigro-aeneus, plus minus virescens et cupreus, flavo limbatus,*

Notes from the Leyden Museum, Vol. XIII.

fulvo tomentosus; infra pallide testaceus, pedibus concoloribus. Labro fere semicirculari, leviter transverso; prothoracis limbo flavo intus vix angulatim dilatato, margine tomentoso parum lato, antice non dilatato, in elytris spatio scutello-suturali ♂ elliptico, postice vix brevissime bilobato, post medium desinente, ♀ longius elliptico, deinde multum ante apicem fortiter strangulato et postice rectangulariter dilatato et totam suturam praeter ad angulum externum occupante; truncatura ♂ leviter obliqua, sat convexa, extus paululum sinuata, angulo externo recto subprominulo, interno recto, ♀ valde obliqua, bisinuata, angulo externo leviter acuto, prominulo, suturali recto. ♂ tibiis anterioribus parum latis, angulo apicali externo valde rotundato et deleto; tarso latiusculo parallelo.

Espèce très dissemblable dans les deux sexes, à bordure jaune du pronotum très peu anguleusement dilatée au milieu. Chez le mâle l'espace lisse scutello-sutural est elliptique et se prolonge jusqu'aux deux tiers de l'élytre par une extrémité qui est à peine et très brièvement bilobée sur la suture; la troncature est faiblement oblique, assez convexe, un peu sinuée en arrière avec l'angle externe droit et un peu saillant, l'interne droit et subarrondi. Chez la femelle l'espace lisse commun a sa première partie elliptique jusqu'aux trois quarts postérieurs où il est fortement rétréci, puis il se dilate de nouveau brusquement à angle droit et occupe toute la troncature, moins le voisinage de l'angle externe, affectant ainsi la forme d'un verre à boire à pied; dans ce sexe la troncature est très fortement oblique, bisinuée, avec l'angle externe sensiblement aigu et saillant, l'interne droit.

Hab. Libéria occidental; pris par Mr. A. T. Demery (Musée de Leyde).

Evreux, Juillet 1891.

NOTE XXVIII.

SYNONYMICAL REMARK ABOUT
CETONIA BIFIDA OLIV.

BY

J. Z. KANNEGIETER.

In a paper on the Australian Schizorrhinidae Dr. Kraatz established a. o. a new genus *Dysephicta* (Deuts. Ent. Zeitschr. XXIV, p. 208) for the reception of *Cetonia bifida* Oliv. (the *Schizorrhina bifida* of G. & P., Schaum and the Munich Catalogue), which was said to be from India or. The type specimen of G. & P. having now passed into the possession of Mr. Oberthür, it has, however, turned out to be, instead of an Indian insect, the well-known *Anochilia republicana* Coq. from Madagascar, for which Dr. Kraatz has proposed the new generic name *Coquerelia* (l. c. p. 314). About this genus Mr. O. E. Janson remarks at the end of his description of *Anochilia incilis* (Cist. Ent. III, p. 147), "the characters given by Kraatz to distinguish his genus *Coquerelia* from *Anochilia* are evidently not of generic value, as they almost entirely fail in this species."

The synonymy of *C. bifida* consequently may be established as follows:

Anochilia bifida Oliv.

Cetonia bifida Oliv.

Schizorrhina bifida G. & P.

Schizorrhina bifida Schaum.

Dysephicta bifida Kraatz.

Anochilia republicana Coq.

Coquerelia republicana Kraatz.

It is worthy of note that Thomson in his list of types of Gory & Percheron (Typi Cetonidarum, p. 36) correctly referred this insect to *Anochilia*.

Amsterdam, July 1891.

NOTE XXIX.

TWO NEW SPECIES OF THE GENUS HELOTA
FROM BORNEO

DESCRIBED BY

C. RITSEMA Cz.

Besides *Helota Vigorsii* Mac Leay no other *Helota*-species were as yet known from Borneo ¹⁾. Now, in a recent consignment of beetles, received by Mr. Neervoort van de Poll and brought together in the Doeson-countries (S. E. Borneo, 1° South, 115° East) by Mr. Wahnes, two new species, each represented by a single female specimen, were present, and Mr. van de Poll kindly allowed me to describe them. One of them, which I have much pleasure in naming after its possessor, is allied to *Helota Faeae* Rits. from Burma ²⁾, the other to the Japanese *Helota cereopunctata* Lewis ³⁾.

Helota Vandepolli, n. sp. ♀.

Length 11 mm. — Shining; narrow and elongate, narrowed in front and behind; the colour of the upper surface is greenish bronze, here and there with faint tinges of purple; the antennae reddish testaceous at the base,

1) The specimens from Borneo with which I am acquainted are in the collections of Mr. René Oberthür and of Mr. Neervoort van de Poll. — A male specimen of a variety of the same species, from the neighbouring island of Labuan, is in the collection of the Genoa Museum (see: Ann. Mus. Civ. di Genova, Vol. XXX, p. 885). In this specimen the punctuation of the head is somewhat coarser than in the specimens from the other localities.

2) Ann. Mus. Civ. di Genova, Vol. XXX (1891), p. 886.

3) Ent. Mo. Mag. Vol. XVII (1881), p. 255.

passing into dark pitchy towards the end; the four convex yellow elytral spots small; surrounded with bluish black, and situated between the 3rd and 6th striae. The colour of the underside is reddish testaceous, with the exception of the head (the throat alone has a testaceous colour), the lateral portions and the anterior edge of the prosternum, and the elytral epipleurae, these parts being of a bronze green colour; the pro- and mesosternum show a metallic green hue; the legs are reddish testaceous, with the apex of the femora, the base and apex of the tibiae, and the tarsi dark pitchy or black, whereas an infusate stripe is present along the upperside of the anterior femora.

Head strongly produced in front of the eyes, with a raised streak along the middle, deeply punctured, the punctures in the raised middle portion large and remote, near the eyes they are smaller and placed close together, in front they are very small; underneath the metallic middle portion of the head is finely and very remotely punctured.

Prothorax subtransverse, widest at the base, narrowing in regularly curved lines to the front; the sides irregularly and rather indistinctly crenulate, the front angles slightly produced; the base deeply bisinuate, the lateral angles acute, the median lobe subtruncate and with an indistinct punctiform impression; the disk strongly and somewhat irregularly closely punctured, with the usual nearly impunctate raised patches, viz. a mesial forked one extending from the base on to the anterior margin, an elongate slightly oblique basal one on each side of the former, and a very small one in front of the oblique basal patches. The scutellum is small and transverse. The sterna show laterally a few distinct punctures; the metallic coloured sides of the prosternum are faintly and irregularly wrinkled anteriorly.

Elytra subparallel, the sides faintly convex, rapidly narrowing in straight lines at some distance before the

Notes from the Leyden Museum, Vol. XIII.

apices ¹⁾ which are subacute, and dehiscent at the suture; each elytron with ten regular, punctured striae of which the 4th and 5th are interrupted by the yellow convex spots and are not continued behind the posterior one; the punctures in the striae become larger and larger towards the sides, and at the same time the interstices become narrower and alternately more costiform; the interstice between the 2nd and 3rd striae becomes costiform towards the end and extends on to the extreme tip of the elytra; the punctuation on the shoulders is obsolete; the epipleurae are smooth and impunctate.

Abdomen smooth, with a few minute hair-bearing punctures along the middle; the last ventral segment regularly rounded posteriorly.

The legs are smooth and impunctate, the anterior tibiae slightly curved.

Helota Vandepolli is at once distinguished from *Helota Feae* by the colour of the sides of the prothorax, these being bronze green in stead of reddish testaceous.

Helota brevis, n. sp. ♀.

Length 8 mm., breadth at the posterior angles of the prothorax 3 mm. — Broader than any of the other species of the extensive division characterized by the evenly punctured pronotum without raised patches.

Rather dull; above dark bronze green, with coppery tinges on the front portion of the head and along the inner orbits; the middle of the anterior margin of the pronotum, its whole basal margin, the scutellum, and the basal margin and sutural interstice of the elytra of a bright golden or coppery colour; the antennae dark reddish testaceous, the club somewhat lighter, the basal joints with a metallic green hue; each elytron provided between the

1) On this spot of the outer margin the described specimen shows on the left side one, on the right side two minute angular notches.

3rd and 6th striae with two pale fulvous round spots. — The colour of the underside is reddish testaceous, with the exception of the head, the lateral portions and the anterior margin of the prosternum, and the elytral epipleurae, these parts being of a bronze green colour; the coxae and femora are reddish testaceous, the tip of the latter and the entire tibiae bright metallic green, the tarsi dark pitchy brown.

Head very broad, not strongly produced in front of the eyes, strongly but rather remotely punctured, the punctures somewhat smaller but closer set along the inner orbits, very fine on the narrowed front portion.

Prothorax distinctly broader at the base than long; the sides, which are minutely crenulate, converge in faintly curved lines towards the front margin, the latter slightly emarginate, the anterior angles consequently only very slightly protruding; the base deeply bisinuate, the lateral angles acute, the median lobe rounded; the upper surface regularly convex, strongly and closely punctured, especially at the sides, leaving free, however, a line along middle, which is broadest at the base. The scutellum is strongly transverse.

Elytra subparallel, narrowing at the posterior third in regularly curved lines towards the apices, which are narrowly rounded, and slightly dehiscent at the suture; an extremely minute tooth is present at the sutural margin at some distance from the extreme tip, and also two or three extremely minute denticulations, better seen from beneath, on the lateral margin at about two-thirds of the length of the elytra. Each elytron has ten striae of deeply impressed punctures, of which the 4th and 5th are interrupted by the fulvous spots and are not continued behind the posterior one; the interstices, which become somewhat costate on the apical portion, are very finely punctured and show moreover a row of punctures which become larger towards the sides.

The under surface of the head is covered with very large

Notes from the Leyden Museum, Vol. XIII.

punctures; the prosternum strongly punctured, somewhat obsoletely however on the testaceous middle portion; the sides of the metasternum with a few large punctures, the middle portion with an impressed longitudinal line; the elytral epipleurae with irregular, not sharply defined punctures.

The ventral segments extremely finely punctured, the last segment subtruncate at the apex.

The legs smooth, the tibiae strongly punctured, those of the anterior pair slightly curved.

Leyden Museum, July 1891.

NOTE XXX.

SOME OBSERVATIONS RELATING CYNOPTERUS
BRACHYOTIS MÜLLER AND KERIVOULA
PELLUCIDA WATERHOUSE

BY

Dr. F. A. JENTINK.

July 1891.

Cynopterus brachyotis S. Müller.

In van der Hoeven's Tijdschrift voor Natuurlijke Geschiedenis en Physiologie, 1838-39, a small bat has been described by Dr. S. Müller under the name *Pachysoma brachyotis*. That author collected a large number of specimens, all in the same locality, a deep lime-stone cave, on the bank of the river Dewej, in the interior of Borneo: these type specimens are in our Museum.

Dobson (Catalogue, 1876) remarks under the head *Cynopterus brachyotus* that an examination of the types of *brachyotus* (lege *brachyotis*) in the Leyden Museum has shown him that the Andaman-island variety (described by him in 1873 as *Cynopterus marginatus*, var. *andamanensis*) is identical with Müller's species. In the well-known Catalogue published by Dobson in 1878, no word however, concerning this species; *Cynopterus brachyotis* Müller seems to be entirely overlooked by that author. I am not aware that the species has been recorded or mentioned after the year 1876, neither in the P. Z. S. nor in any other periodical, so that I fear that it is on the way to disappear among

Notes from the Leyden Museum, Vol. XIII.

its fellows; the more as Dobson has bestowed the specific title of *brachyotis* upon a new species of the with *Cynopterus* so closely allied family *Cynonycteris* (see P. Z. S. 1877 and Catalogue, 1878) and so one perhaps might confound them and believe that Müller's *brachyotis* would be the same as Dobson's *brachyotis*, meanwhile they represent two well defined and really very different species, belonging to two distinct families.

Müller observed that *brachyotis* is about one third smaller than *tithecheilum* (= *marginatus*), for the rest colored like that species, the wings however being darker, of a sooty color, meanwhile the ears present too a sooty color: Temminck (Mon. mamm. II) compared the type-specimens with *Pachysoma brevicaudatum* (= *C. marginatus*) and remarked that Müller's *brachyotis* »diffère néanmoins par ses petites oreilles courtes, arrondies, dépourvues de toute bordure marginale et de plis verticaux internes; elles sont aussi moins larges et toujours d'une couleur noire." Although Müller's specimens are at present nearly white, with exception of the reddish colored collar, so that the dark tinge of ears and wings has disappeared (they have been preserved in a stuffed state and have been bleached by the influence of light), the white margin of the ears, however, is very clear to see, so that I cannot understand how Temminck overlooked this characteristic and could write that the ears are »dépourvues de toute bordure marginale."

But taking leave of badly preserved and bleached stuffed specimens I now proceed to give a better exposition of the two *Cynopterus*-species with white-bordered ears, *C. marginatus* and *C. brachyotis*, based upon fresh material, preserved in alcohol, recently received from Java and Sumatra.

C. brachyotis at a glance is distinguished from *C. marginatus* by its white fingers, strikingly contrasting with the dark wing-membranes, smaller ears, more elongate muzzle and smaller head.

The tinge of the hairs on the back of *C. marginatus* is

somewhat black, meanwhile in *C. brachyotis* a more brownish tinge prevails. In the males of *C. brachyotis* (sometimes too present in the females) the collar is much more developed and generally redder colored than in male-specimens of *C. marginatus*.

The dimensions, in Millimeters, taken from about twenty specimens of *C. brachyotis* and several specimens of *C. marginatus* vary as follows:

	<i>C. brachyotis.</i>	<i>C. marginatus.</i>
Length ear (anteriorly) . . .	15—17 . . .	18—20,5
» ear to eye	9—11 . . .	13—14
» eye to tip of nostril.	10,5—11 . . .	12—13
» forearm	60—70 . . .	75—80
» second finger.	101—117 . .	126—133
» fourth finger	78—80 . . .	97—102
» tibia, foot and claws.	35—42 . . .	49—52

I failed to detect difference in length in the sexes; all the measured specimens are fullgrown, f. i. pregnant females. They have been collected by Mr. Kannegieter in Java (Buitenzorg), and in Sumatra (Deli-Bedagei, Krapoh and Palenbang, Lahat) and have been presented to our Museum by Mr. J. R. H. Neervoort van de Poll.

Kerivoula pellucida Waterhouse.

Waterhouse described this species after a specimen collected by Mr. Cuming in the Philippine Islands (P. Z. S. 1845) and presented by the latter to the Zoological Society's collection. According to Dr. Dobson (Catalogue, Indian Museum, 1876) the type is an adult ♂ preserved in alcohol; in 1878 (Catalogue, Chiroptera, British Museum) Dobson has exhibited a second specimen, a young ♀, too from the Philippines: his descriptions and measurements given in 1878 exactly and verbally agree with those given in 1876. Mr. Tomes (P. Z. S. 1858) said that the examination and comparison of Waterhouse's type-specimen of

Notes from the Leyden Museum, Vol. XIII.

V. pellucidus and the type of Horsfield's *K. hardwickii* has proved beyond question their identity and he gives the dimensions taken from the type-specimen of *V. pellucidus*, adding that the dimensions may be considerably altered by the state of preservation of that specimen. And indeed if we compare the measurements given by Waterhouse, Tomes and Dobson, it seems somewhat difficult to believe that they have all been taken from one and the same specimen.

	Waterhouse, Tomes, Dobson.		
	1845	1858	1876, 1878.
Longitudo ab apice rostri ad			
caudae basin.	1,8	1,9 . . .	1,65
Longitudo caudae	1,9 $\frac{1}{2}$. . .	1,11 . .	2.
» antibrachii	1,3	1,3 . . .	1,25
» auris	0,7	0,7 . . .	0,7
Alarum amplitudo	9,6	10,6	
Length of head		0,8 . . .	0,6
» » tragus		0,4 . . .	0,35
» » longest finger		2,10 $\frac{1}{2}$.	2,9
» » fourth finger.		2,1 . . .	2.
» » foot and claws.		0,4 . . .	0,3

Dobson (Catalogue, 1876) again separated *pellucida* from *hardwickii*; he said that Tomes confounded the two species and that the size and shape of the ears at once distinguish the species.

I am not aware that after the year 1878 *Kerivoula pellucida* has been mentioned in scientific papers or other publications, and I think that, except the type and a young specimen in the British Museum, both from the Philippines, no specimen has reached Europe.

In the above mentioned collection there are four specimens, from Krapoh, Deli-Bedagei, East Sumatra, a male and three females, which I, without any hesitation, enregister as *Kerivoula pellucida* Waterhouse. It is at once distinguished from *K. hardwickii* by its color, size and shape of the ears and different length of body and wings.

Notes from the Leyden Museum, Vol. XIII.

Meanwhile in *hardwickii* a rather dark tinge prevails and the difference between upper- and under parts of the body hardly is perceptible, in *pellucida* the upper parts are of a brownish red, meanwhile the underparts are much lighter colored so that those parts make the impression of being whitish.

In *hardwickii* the muzzle is very hairy, in *pellucida* however that part is provided with a few scattered hairs, so that at first glance one would believe the muzzle to be bald.

With regard to the ears I refer to Dobson's description.

Measurements in Mm. of the four Sumatra-specimens preserved in alcohol in our Museum:

	<i>K. pellucida.</i>				<i>K. hardwickii.</i>
	♂	♀	♀	♀	♂
tail	40 . .	41 . .	42 . .	45 . .	55
ear.	14,5	15,5	15,5	16 . .	12,5
tragus.	8,5 .	8,5 .	9 . .	8,5 . .	7
forearm	30 . .	30 . .	31 . .	32 . .	33
second finger	67 . .	66 . .	67,5 .	70 . .	72
fourth finger	49 . .	50 . .	49 . .	51 . .	52
foot and claws . . .	6,5 . .	6,5 . .	6,5 . .	7 . . .	7

As may be seen from the above measurements *K. pellucida* always is smaller in all directions except in length of ear and tragus, which parts constantly are strikingly of a much larger size, relatively and absolutely.

NOTE XXXI.

SOME ADDITIONS TO THE MAMMALIAN-FAUNA OF
BILLITON

BY

Dr. F. A. JENTINK.

July 1891.

In the Notes from the Leyden Museum, 1890, p. 149, I said that *Sciurus prevostii* belongs to the fauna of Billiton; this statement was based upon two specimens procured by the late Teysmann in 1877 in that island and presented to our Museum (cf. Cat. syst. des Mammifères, 1888, p. 26, *m* and *n*). Dr. Vorderman kindly informs me that *Sciurus prevostii* perhaps formerly has been introduced there and afterwards has grown wild. Specimens have been brought over from Mendanao, a small island close to the west coast of Billiton, and are at present living in Billiton in the neighborhood of Tandjong Pandan, N. W. Billiton, in the gardens, having escaped from their cages. He nowhere in the interior observed a single specimen.

According to Dr. Vorderman in Billiton is living the *Cervus*-species known from Banka, viz. *Cervulus muntjac*, moreover the *Kidang* and *Napoe* are very common. In a collection of animals from different localities presented by Dr. Vorderman to our Museum there is a *Tragulus*-specimen, according the label called *Pelandock* by the indigenous — I remember that Dr. Hagen ¹⁾ remarked that in Deli the

1) Die Pflanzen- und Thierwelt von Deli, auf der Ostküste Sumatra's. Naturwissenschaftliche Skizzen und Beiträge, in Kon. Ned. Aardrijkskundig Tijdschrift, 1890, p. 102.

Malays call *Tragulus napu*, *Blandoh*, perhaps a contraction of *Pelandock*.

This Billiton-specimen is quite different in color from all other hitherto described species or varieties and, compared with our very large number of *Tragulus*-specimens, there only is a single specimen with which it agrees, namely an individual collected by Teysmann in Banka: the Banka-specimen is an adult, the Billiton-specimen a nearly adult one (the hindmost molars are not yet developed). As will be clear by reading the following description it most likely can be brought under one of the known species and so I think it correct to describe it not as a new species, but rather as a melanistic variety of

Tragulus napu.

It attains the size of *Tragulus napu* and agrees with this species too in color of the upper parts, that is to say it has such a dark color as the darkest colored specimens of *napu* present. From eye to nose runs a black stripe like in *napu* and *stanleyanus*. Nape of the neck (in *javanicus* the nape of the neck and sides of throat are grizzled, in *kanchil* there is a well defined black band from between the ears along the nape of the neck) and round the throat of a shining black, only interrupted by the well known white throat-bands. In *napu* and *stanleyanus* there are five, in *javanicus* and *kanchil* three white throat-bands meeting on the chin in a broadly developed white spot; in our melanistic specimens however the chin is bald, the bands along the sides of the chin are very small, hardly visible and in the Billiton-specimen only represented by a white spot on the posterior angle of the lower jaw. The three other white streaks are very small and meet together in the Banka-specimen, meanwhile in the Billiton-specimen only the central streak is complete and of the two side-streaks only the posterior half slightly is present. Belly like in *kanchil* with a very well developed dark brown colored line along its middle.

Notes from the Leyden Museum, Vol. XIII.

We possess a true *Tragulus kanchil* and a true *Tragulus napu* both collected too in Banka by Mr. Teysmann, and if *kidang* has the same signification as *kanchil* then *Tragulus napu* and *kanchil* may be reckoned to live both in Banka and Billiton, being *napu* in the latter locality represented by a peculiar melanistic variety.

Cercocebus cynamolgos Schreber.

Observed in Billiton by Dr. Vorderman and known by the indigenous under the name *Krah*, exactly like in Deli, Sumatra (cf. Dr. Hagen's book above mentioned, p. 80).

Semnopithecus maurus Schreber.

In Dr. Vorderman's collections from Billiton is an albino-variety of this species. He wrote me that a colony of this variety is living in the neighborhood of Gantoeng, East Billiton, where he however could not procure a specimen, but that the individual he sent to me had been presented to his wife by one of his friends and that it died shortly after its being in her possession.

It is called *lutong* or *loetong* by the indigenous, exactly like in Sumatra.

I demonstrated in 1889, Notes from the Leyden Museum, p. 217, that *S. pruinus* Desmarest is a mere variety of *S. maurus* Schreber.

In conclusion the following Mammals are stated to inhabit the island of Billiton:

<i>Semnopithecus maurus</i> (albino-variety).	<i>Cervulus muntjac</i> .
<i>Cercocebus cynamolgos</i> .	<i>Tragulus napu</i> (melanistic variety).
<i>Tarsius spectrum</i> .	<i>Tragulus kanchil</i> (?).
<i>Sciuropterus vordermanni</i> .	<i>Tupaja javanica</i> .
<i>Sciurus albiceps</i> .	<i>Rhinolophus trifolius</i> .
» <i>soricinus</i> .	<i>Vesperugo vordermanni</i> .
» <i>notatus</i> .	<i>Vespertilio muricola</i> .
» <i>prevostii</i> (introduced).	<i>Emballonura semicaudata</i> .

NOTE XXXII.
ON A COLLECTION OF BIRDS FROM FLORES,
SAMAO AND TIMOR

BY

J. BÜTTIKOFER.

Last month the Leyden Museum received a small number of birds, presented by Dr. H. ten Kate, who had collected them during his recent voyage through the above mentioned islands. Though most of the 29 species are already mentioned in the list given by Wallace, P. Z. S. 1863, p. 484, I do not hesitate to give an enumeration of ten Kate's collection, the more as it has given me the chance of describing a new species of *Tropidorhynchus*, years ago discovered by Forsten and sent over since by Mr. van Lansberge, Prof. Max Weber and now contained in ten Kate's recent collection.

1. *Collocalia* spec. ?

Two nestlings from Samao.

2. *Merops ornatus*, Lath.

One specimen from Samao.

3. *Anthus rufulus*, Vieill.

Anthus medius, Wall. P. Z. S. 1863, p. 488.

One specimen from Samao.

Notes from the Leyden Museum, Vol. XIII.

4. *Pratincola caprata* (L.).

Adult male and female from Kupang (Timor), and an adult male from Samao.

5. *Oreicola melanoleuca* (Vieill.).

Adult male and female from Samao and Kupang (Timor). A third specimen, with the plumage of the female but the tail as in the adult male (from Samao), seems to be a young male in transitional stage of plumage.

There is much difference in the distribution of white in this species, though hardly sufficient to base different species upon. Amongst the 15 specimens now in the collections of the Leyden Museum, there are three in which the white superciliary stripe is absolutely wanting, while the fourth shows some very slight traces of them. This form considered to be a species, would have to bear the name of *O. luctuosa* (Bp. Consp. I, p. 304). The base of the four outer pairs of tail-feathers is white in this form, the white occupying one basal third in the outermost pair and increasing in extent on the next pairs, the two basal thirds of the fourth pair being white.

The other form, with a distinct white superciliary stripe, might again be divided into a form with the white base of the tail-feathers like in the above mentioned form [the typical specimens of *O. melanoleuca* (Bp.)], and another with only the extreme base of the tail-feathers white.

There is no noticeable difference in size between the three mentioned forms, and all three seem to be spread over one and the same area. Of the three birds sent by Dr. ten Kate, all three with a well-pronounced superciliary stripe, the adult male would belong to the third group, with only the extreme base of the four outermost pairs of tail-feathers white, while the not fully adult male, with the fourth pair of tail-feathers white at about half its length, seems to be intermediate between the second and third group.

Notes from the Leyden Museum, Vol. XIII.

6. *Siphia hyacinthina* (Temm.).

An adult female from Kupang (Timor) and another from Samao.

7. *Rhipidura rufiventris* (Vieill.).

Two specimens from Kupang (Timor).

8. *Piezorhynchus trivirgatus* (Temm.).

An adult specimen from Kupang (Timor).

9. *Monarcha inornata* (Garn.).

One specimen from Kupang (Timor).

10. *Artamus leucogaster* (Val.).

One specimen from Kupang (Timor) and another from Endeh (Flores).

11. *Artamus perspicillatus*, Bp.

One specimen from Samao.

12. *Lalage timoriensis* (S. Müll.).

An adult male from Kupang (Timor).

13. *Pachycephala orphea*, Jard.

Three specimens from Kupang (Timor).

14. *Corvus macrorhynchus*, Wagl.

An immature specimen with the lower mandible white at the base, from Kupang (Timor).

15. *Tropidorhynchus timoriensis*, S. Müll.

An adult male with the characteristic white lateral edging of the crown, from Kupang (Timor).

Notes from the Leyden Museum, Vol. XIII.

16. *Tropidorhynchus neglectus*, n. sp.

Tropidorhynchus timoriensis, Wall. (part.) P. Z. S. 1863, p. 486.

Philemon timoriensis, Gadow (part.), Cat. Birds Br. Mus. Vol. IX, p. 273; — Guillemard, P. Z. S. 1885, p. 509 (ex Sumbawa).

Similar to *T. timoriensis*, but the silvery whitish edge along each side of the crown, thoroughly mentioned by S. Müller in his original description of the latter species, entirely wanting.

General color above brownish gray, underneath paler, centre of abdomen and under tail-coverts almost white, crown somewhat more fulvous than the back, not flanked with white, the feathers of the hind neck in adult birds like the crown or but little lighter, only in immature specimens forming a more or less silvery white collar. Tail like upper surface, tipped with white. Front and whole sides of head except the ear-coverts bare, the latter very dark brown, nearly black, chin and throat silvery white, with black shaft-streaks on each feather, feathers on lower throat and chest similar in color and lanceolate. Bill, well-developed knob on the culmen, naked parts of the head, and feet black.

Measurements like in *T. timoriensis*: wing 13,6—15 cm.; tail 1,2—1,5 cm.; tarsus 3,8 cm., bill from behind the hump to the tip 4,2—4,5 cm.

Hab. Lombok (probably), Flores, Sumbawa, where it represents *T. timoriensis*, which latter inhabits Timor and Wetter.

Already some years ago, when looking through a collection of birds we had received from Mr. van Lansberge, and amongst which was a *Tropidorhynchus*, I was struck by the want of the silvery stripe which flanks the crown in *T. timoriensis*, and found that another specimen in the Leyden Museum, collected by Forsten at Bima (Sumbawa), and a third, collected by Semmelink at Larantuka (Flores), differed in the same way from our Timor-specimens, wherefore I gave these specimens the manuscript name *T. neglectus*.

Notes from the Leyden Museum, Vol. XIII.

Since that time we received three other specimens of this long overlooked species from Prof. Max Weber, who collected them at Maumeri and Reo on the South Coast of Flores; and two specimens from Endeh, also South Coast of Flores, which are contained in Dr. ten Kate's present collection, prove to belong to the same species, while a third, collected at Kupang (Timor), has the silvery edgings to the crown which are particular to *T. timoriensis*.

The specimen from Sumbawa, presented by Mr. van Lansberge, is not fully adult. The knob on the culmen is feebly developed, the whitish collar on the hind neck very conspicuous, throat and chest are not as white as in the adult, but strongly tinged with olive brown, and the feathers on the back show conspicuous terminal white edgings.

17. *Ptilotis limbata* (S. Müll.).

One specimen from Kupang (Timor).

18. *Ptilotis reticulata* (Temm.).

Three specimens from Kupang (Timor).

19. *Myzomela vulnerata* (S. Müll.).

An adult female from Kupang (Timor).

20. *Zosterops citrinella*? Bp.

Two specimens from Kupang and two from Amarassi (Timor). All four specimens differ from our typical *Z. citrinella* in being much paler. The upper surface is olive green with a very strong grayish tinge, the lower silvery gray instead of isabelline. The yellow on the front does not extend over the upper surface of the head, this latter being of the same color as the back, and the yellow on the throat is not spread over the upper breast. These differences would be sufficient to base a new species upon, but

Notes from the Leyden Museum, Vol. XIII.

the birds having been preserved in spirits, it would be rather venturous to do so, as they might have been bleached in the liquor.

21. *Zosterops mülleri* (Hartl.).

One specimen from Kupang (Timor).

22. *Dicaeum mackloti*, Müll. & Schl.

A male and two females from Kupang (Timor).

23. *Cinnyris pectoralis* (Horsf.).

An adult female, from Samao. This species has not yet been recorded from Timor.

24. *Cinnyris solaris* (Temm.).

An adult male from Kupang (Timor).

25. *Munia quinticolor* (Vieill.).

One specimen from Kupang and three from Amarassi (Timor).

26. *Munia fuscata* (Vieill.).

Three adult specimens from Kupang and two from Amarassi (Timor).

27. *Taeniopygia insularis* (Wall.).

Two specimens (♂, ♀) from Kupang (Timor), and five (2 ♂, 3 ♀) from Samao. This species is, moreover, represented in the Leyden Museum by specimens from Sumbawa, Letti and Kisser.

28. *Charadrius geoffroyi*, Wagl.

Charadrius leschenaulti, Wall. P. Z. S. 1863, p. 487.

Adult male and female, both from Kupang (Timor). The

Notes from the Leyden Museum, Vol. XIII.

male with the red on head and collar not fully developed; the female shows no trace of red at all.

29. *Parra gallinacea*, Temm.

Parra cristata, Schl. (nec Vieill.) Mus. P.-B. Ralli, p. 68; id. Dierentuin, p. 265 (cum fig.).

An adult specimen from Kupang (Timor), which fully agrees with our specimens from Celebes. This species has not been recorded from Timor before, and the locality »Java» mentioned for it in Gray's »Handlist» seems to be very doubtful.

Leyden Museum, August 1891.

NOTE XXXIII.

ON LEPUS NETSCHERI SCHLEGEL, FELIS MEGALOTIS MÜLLER AND ANOA SANTENG DUBOIS

BY

Dr. F. A. JENTINK.

August 1891.

Lepus netscheri Schlegel.

The type-specimen of this species described by me in the Notes from the Leyden Museum, 1880, p. 62, has been figured on plate I of the work entitled: »Bijdragen tot de kennis der Fauna van Midden-Sumatra, 1887". Although there is no reason to suppose that it is a very rare species, it nevertheless is a fact that it very seldom has been observed.

Mr. P. J. van Houten, formerly at Padang, related (see Fauna van Midden-Sumatra, p. 23) that he was told that there has been seen a Hare in a coffeeplantation in the neighborhood of Padang.

In March 1887 Mr. J. L. Weyers at Païnan, West Sumatra, wrote to Mr. C. Ritsema Cz., the well known Entomologist in the Leyden Museum, about *Lepus netscheri* as follows:

»En décembre 1881 Mr. I. A. Harten, Directeur-gérant de la mine de Salida, qui occupe encore actuellement les mêmes fonctions, se trouvait avec le mécanicien de la mine sur les bords de la baie de Païnan, surveillant le débarquement d'une machine, à peu de distance du promontoire situé à la partie septentrionale de cette baie et qui fait face à deux petites îles, nommées Poeloe tjinko besaar et

Notes from the Leyden Museum, Vol. XIII.

Poeloe tjinko ketjil. Son attention fut attirée par un group d'indigènes entourant un petit animal mort, qu'ils semblaient examiner avec curiosité et étonnement; il s'approcha à son tour pour examiner cet animal et fut fort étonné de constater que c'était un lièvre; c'était le premier animal de ce genre qu'il voyait depuis son arrivée aux Indes qui datait de plusieurs années déjà. Il demanda naturellement quelques renseignements aux indigènes; ceux-ci lui répondirent qu'ils ne connaissaient pas cet animal et que c'était la première fois qu'ils en voyaient un spécimen. Mr. Harten, n'étant pas naturaliste, n'attacha pas une grande importance à ce fait et ne s'en préoccupa plus; mais, lui ayant montré dernièrement la planche qui représente le *Lepus netscheri* dans l'ouvrage de l'expédition de Midden-Sumatra, que l'on m'avait communiqué, il reconnut immédiatement l'animal à ses oreilles relativement courtes pour le genre et aux particularités si remarquables de son pelage.

Des faits cités dans l'ouvrage de l'Expédition de Midden-Sumatra et de celui que je communique, il résulte évidemment que le *Lepus netscheri* est une espèce excessivement rare, du moins dans la partie de Sumatra où on l'a rencontré jusqu'ici, très accidentellement sans doute; il est non moins évident qu'il est confiné à cette grande île où il forme une espèce bien spéciale et distincte. — Le fait que cet animal est totalement inconnu aux indigènes de cette partie de Sumatra, semblerait démontrer que les rares spécimens rencontrés jusqu'ici, l'ont été tout à fait accidentellement et que ce n'est pas là que se trouve sa véritable localisation. Si nous raisonnons par analogie, en prenant en considération les habitudes et le genre de vie des espèces du genre *Lepus*, nous voyons qu'elles habitent les contrées tempérées et même septentrionales de notre globe; nous serons donc tentés de supposer qu'on pourra s'attendre à rencontrer le *Lepus netscheri* sur les hauts plateaux ou les hautes montagnes de l'intérieur, et que c'est bien là son véritable habitat.

Notes from the Leyden Museum, Vol. XIII.

Peut-être est ce bien là le cas et peut-être aussi nous trouvons-nous en présence d'un de ces cas de localisation très restreinte et assez étrangement exceptionnelle, comme on en rencontre assez souvent en entomologie, mais qui sont beaucoup plus rares pour les mammifères. Les rares naturalistes qui ont parcouru l'intérieur de Sumatra ont peut-être passé quelquefois près du *Lepus netscheri* sans s'en douter."

I am very indebted to Mr. Ritsema for the kind permission to publish the foregoing letter, which will interest naturalists, the more as I can hereafter add an extract from a letter received on June 23 last and written by Mr. J. C. van Hasselt, Controller at Solok, Sumatra. Mr. van Hasselt writes: »I possess a female specimen of *Lepus netscheri* described in the Notes from the Leyden Museum, 1880. I procured the animal when alive: after its dead I put it in spirits." Although some observations about the living animal would have been very welcome, these short lines suffice to convince us that a second specimen of *Lepus netscheri* has now been secured, and I express the hope that we will have it in Leyden at a not very remote date.

Felis megalotis S. Müller.

Again a very rare species, only known from the type-specimen in the Leyden Museum, described in the work entitled: »Verhandelingen over de Natuurlijke Geschiedenis der Nederlandsche Overzeesche Bezittingen, Zoologie, p. 54, 1839—44." — I am not aware that any traveller or naturalist has seen the species or has brought over a specimen. The type is a not adult specimen from Timor.

Giebel (Die Säugethiere, 1855) remarked: »vielleicht ist Müller's *Felis megalotis* von Timor nur eine blosse Varietät von *Felis minuta* Temminck."

Blyth (P. Z. S. L. 1863, p. 186) said: »*Felis megalotis* Temminck. Hab. Timor. (non vidimus)."

Notes from the Leyden Museum, Vol. XIII.

Dr. Gray has enregistered it in his Catalogue of Carnivorous, 1869, p. 33 and in P. Z. S. L. 1867, p. 275, in the following short terms: »Hab. Timor. Not seen by me."

Dr. Mivart has given a translation of Müller's original description (see: The Cat, an introduction to the study of Backboned Animals, 1881, p. 417). Dr. Mivart however failed to give Timor as certain locality: perhaps Mivart did so because some time before Mr. Elliot had given no credit to that locality and because Wallace (the geographical distribution of Animals, 1876, Vol. I, p. 422) too was of Elliot's opinion, for he wrote: »the *Felis megalotis*, long supposed to be a native of Timor, has been ascertained by Mr. Elliot to belong to a different country altogether."

The other day I received a collection of animals collected by Dr. H. ten Kate in Timor, and among other mammals he sent over a nearly full-grown male-specimen of *Felis megalotis* in spirits, with the request to expedite it to Dr. Max Weber in Amsterdam. Dr. ten Kate wrote to me that it seems to be a very rare animal, and that the Timorese call it *meo-foeik* (*meo* = cat and *foeik* = wild), the Malay *poes-oetan* (*poes* = cat and *oetan* = wood).

I think that now a second specimen from the same island has been brought over, nobody will doubt whether *Felis megalotis* really is a *Felis*-species from Timor.

Anoa santeng Dubois.

Under this name I exhibit a problematic mammal discussed by a friend of mine, who at present is in Java, Kediri Residency, excavating and studying fossils. I should not have fixed the attention of naturalists upon this mammal, were it not that my friend, Dr. Dubois himself has spoken about it — although in very short terms — in the *Natuurkundig Tijdschrift voor Nederlandsch-Indië*, 1891, Deel LI, Afl. I, p. 96. He relates there »that among

Notes from the Leyden Museum, Vol. XIII.

»other fossils he found bones of an *Anoa*, which should have
»attained the size of a goat, and probably will turn out
»to be no other dwarf-buffalo than the small *santeng*,
»whereof the Javanese talk, and which differs from all
»other known living and fossil species.”

Now everyone will be very anxious to hear more concerning the *santeng* and therefore I will reproduce what Dr. Dubois wrote to me: »I found small horn-cores, measuring ± 10 cm., which I at first regarded as belonging to a *Capra*-species; having however now found rather large parts of frontlets with the same mentioned horn-cores attached to it, it seems to me that they are implanted like in the typical bovine-skulls. The fore-head is about half as broad as the same part in a middle sized *karbouw*. The animal attained, I think, the size of a goat. Now I recollect having been told by several Javanese of a very small species of *banteng* — and again inquiring some old men assured me that they had *seen* the animal. A Wedono drew the head with the horns, whereby it struck me that he was not brought to confusion by my remark that the horns were bent downward, he drew the horns upward and said that the color of the animal is black, excepting the legs which are white: size somewhat larger than *kanchil*. Highly interesting is that all the reports agree in the main points, f. i. as to the form of the horns, generally described as that of the fruit of a *lombok* (red pepper) — and that they accord, as far as it seems to me, with the fossil form. I think the small size ascribed to the animal to be a common exaggeration, like all relating originating from a not fresh source. This paradoxical animal generally is known under the name *santeng* and I therefore think to do homage to the Javan mind to natural history in calling the fossil animal later on *Anoa santeng*. The form of horns and of molars and its size make it namely very probable that it belongs truly to the same genus as the Celebian species.”

So far Dr. Dubois. Although it may be that he is quite

Notes from the Leyden Museum, Vol. XIII.

right as to his new fossil, before having seen its skin, skull and horns I cannot believe that in Java an animal of such a rather large size still should be living, for I am of the opinion of Wallace who expressed his view about unknown mammals in Java as follows: "we should be almost as likely to find new species of (large) mammals in Central Europe as in Java."

NOTE XXXIV.

SYNOPSIS AND ALPHABETICAL LIST
OF THE DESCRIBED SPECIES OF THE COLEOPTEROUS
GENUS HELOTA McL.

BY

C. RITSEMA Cz.

SYNOPSIS OF SPECIES. ¹⁾

I. Base of elytra coloured as apex.

A. Elytra with four convex flavous spots.

a. Pronotum rugose, with raised patches.

α. Elytra regularly punctate-striate all over.

x. Upper surface bright metallic green,
flavous elytral spots large.*. Apical half of antennae pitchy black;
narrowed front-portion of head finely
punctured *Vigorsii*. ²⁾**. Antennae entirely pale fulvous; nar-
rowed front-portion of head strongly
punctured *scintillans*.xx. Upper surface coppery red or dark
bronze, flavous elytral spots small.†. Upper surface and elytral epipleurae
bronze coloured.*. Sides of prothorax reddish testaceous. *Feae*.**. " " " coloured as the disc. *Vandepolli*.††. Upper surface and elytral epipleurae
coppery red.

1) For a summary of the principal divisions with reference to the pages, see p. 232.

2) As to the author-names I refer to the alphabetical list of species.

- . Lateral streaks of pronotum irregularly confluent punctured, leaving some smooth interspaces. — ♂. Apices of elytra conjointly rounded, with a spine at the suture. — ♀. Apices of elytra not or slightly prolonged.
- 1. ♂. Anterior tibiae with a small compressed dilatation a little *before* the apex of the inner margin or without it. — ♀. Apices of elytra slightly prolonged, last ventral segment rounded posteriorly.
- 2. ♂. Anterior tibiae with a small dilatation, hindlegs of normal length. — ♀. Apices of elytra dehiscent. *Servillei*.
- 3. ♂. Anterior tibiae without dilatation, hindlegs very slender and elongate. — ♀. Apices of elytra not dehiscent *longipes*.
- 4. ♂. Anterior tibiae with a very conspicuous compressed dilatation *at* the end of the inner margin. — ♀. Apices of elytra conjointly rounded, last ventral segment broadly truncate posteriorly. *Fairmairei*.
- . Lateral streaks of pronotum regularly densely punctured, without smooth interspaces. — ♂. Apices of elytra faintly bidentate near the suture (about as in *Vigorsii*). — ♀. Apices of elytra acutely prolonged, last ventral segment truncate in a bisinuate manner. *Oberthüri*.
- β. Elytra punctured in rows near the suture, the remaining portion irregularly punctured; flavous elytral spots small.
- §. Space between the suture and the line which unites the centres of the flavous

Notes from the Leyden Museum, Vol. XIII.

spots provided with four rather regular rows of punctures.

- *. Outer half of elytra more or less punctured in rows, its sculpture not strongly contrasting with that of the inner half. Abdomen dark coloured in the middle, the margins rufous. — ♂. Last ventral segment without tomentose impression, its apical margin faintly trisinate. — ♀. Last ventral segment triangular with rounded tip. *Kolbei*.
- **. Outer half of elytra rugose in consequence of the extremely dense punctuation, its sculpture therefore strongly contrasting with that of the inner half. Abdomen rufous. — ♂. Last ventral segment with a tomentose impression. — ♀. Last ventral segment strongly transverse.
- .. 3rd and 5th interstices (the sutural one reckoned as the 1st) continuous, here and there with a large puncture. — ♂. Anterior tibiae with a compressed dilatation at the end of the inner margin. — ♀. Apices of elytra pointed, last ventral segment with an impression at the apex *gemmata*.
- ... 3rd and 5th interstices divided by the often coalescing bordering striae into detached ovate portions. — ♂. Anterior tibiae without dilatation at the end of the inner margin. — ♀. Apices of elytra separately rounded, last ventral segment without impression at the apex *fulviventris*.
- §§. The two innermost striae only rather regular.

Notes from the Leyden Museum, Vol. XIII.

- Θ. Raised thoracical patches impunctate or nearly so. (Large or moderately large species: $18\frac{1}{2}$ mm. — $12\frac{1}{2}$ mm.).
 - α. ♀. Apices of elytra rather bluntly prolonged; last ventral segment as long as the 3rd and 4th taken together. — ♂. Middle of metasternum with a tomentose spot, sutural spine very distinct. *Gorhami*.
 - αα. ♀. Apices of elytra very acutely prolonged; last ventral segment decidedly shorter than the 3rd and 4th taken together. — (♂ unknown). *caudata*.
- ΘΘ. Raised thoracical patches punctured. (Smaller species: $8\frac{1}{2}$ mm. — $9\frac{1}{4}$ mm.).
 - ×. Sides of prothorax finely crenulate (each with 12—14 crenulations); under surface and legs dark pitchy brown *sinensis*.
 - ××. Sides of prothorax coarsely crenulate (each with 8 or 9 crenulations); middle of sterna and the abdomen pale fulvous; femora pale fulvous with green tips, tibiae and tarsi alternately pitchy and pale fulvous. *thibetana*.
- b. Pronotum more finely and evenly punctured, without raised patches.
 - α. Prosternum entirely fulvous.
 - ×. Legs partly fulvous, partly metallic green.
 - †. Tips of femora and the tibiae metallic green.
 - *. Anterior and posterior elytral spots situated between the same striae, viz. between the 3rd and 7th *Guerinii*.
 - **.

Notes from the Leyden Museum, Vol. XIII.

- 3. Anterior spots between the 4th and 6th, the posterior ones between the 3rd and 6th striae *curvipes*.
- 22. Anterior spots between the 4th and 7th, the posterior ones between the 3rd and 7th striae *ocellata*.
- 222. Anterior spots between the 4th and 7th, the posterior ones between the 3rd and 6th striae.
- 22. Outer margin of elytra entire. . . *Dohertyi*.
- 222. Apical third of outer margin of elytra serrulate *serratipennis*.
- ††. Tips of femora metallic green; tibiae pitchy, marked with brown-red on the apical half; the spots on the elytra between the 3rd and 6th striae *rotundata*.
- ××. Legs fulvous, without metallic green, and, especially in the ♂, very slender and elongate. *laevigata*.
- β. Prosternum fulvous in the middle, lateral portions metallic green.
- §. Tibiae entirely metallic green.
- *. Shape narrow (long. 7¹/₂—8¹/₂ mm.; lat. 2¹/₄—2¹/₂ mm.); coppery bronze; anterior elytral spots between the 4th and 6th, the posterior ones between the 3rd and 6th striae. *cereopunc-*
- **.
- Shape broader (long. 8 mm.; lat. 3 mm.); [tata.
bronze green; elytral spots between the 3rd and 6th striae. *brevis*.
- §§. Tibiae metallic green at the base, the rest fulvous.
- Θ. Anterior and posterior elytral spots between the same striae, viz. between the 3rd and 7th.
- ×. Prothorax quadrate. *Gestroi*.
- ××. » narrowed to the front (trapezoidal).

Notes from the Leyden Museum, Vol. XIII.

ALPHABETICAL LIST OF SPECIES.

Helota

MacLeay. *Annulosa javanica*, 1825, p. 42; *Ed.*
Lequien, 1833, p. 151.

africana Olliff. *Ann. a. Mag. Nat. Hist.* (5) Angola.
XIII, 1884, p. 479. — *Aid Ident. Ins.*
t. 153, f. 3.

Boysli Rits. *Notes Leyd. Mus.* XI, 1889, India.
p. 189.

brevis Rits. *Notes Leyd. Mus.* XIII, 1891, Borneo.
p. 199.

caudata Rits. *Notes Leyd. Mus.* XI, 1889, China.
p. 102.

cereo-punctata Lewis. *Ent. Mo. Mag.* XVII, Japan.
1881, p. 255. — *Aid Ident. Ins.* t. 133, f. 1.

costata Rits. *Notes Leyd. Mus.* XI, 1889, Zanzibar.
p. 108.

culta Olliff. *Cist. Ent.* III, 1883, pp. 55 India bor.
and 101; t. 3, f. 2.

curvipes Oberth. *Coleopt. Novit.* I, 1883, Himalaya.
p. 60. — Rits. *Notes Leyd. Mus.* XI,
1889, p. 105. — id. *Ann. Mus. Civ.*
Genova, XXX, 1891, p. 889.

difficilis Rits. *Ann. Mus. Civ. Genova*, XXX, Burma.
1891, p. 896.

Dohertyi Rits. *Ann. Mus. Civ. Genova*, XXX, „
1891, p. 898.

dubla Rits. *Ann. Mus. Civ. Genova*, XXX, „
1891, p. 901.

Falrmairi Rits. *Notes Leyd. Mus.* XI, 1889, Sikkim.
p. 101.

Feae Rits. *Ann. Mus. Civ. Genova*, XXX, Burma.
1891, p. 886.

fulvitaris Rits. *Notes Leyd. Mus.* XI, 1889, Darjeeling.
p. 107.

Notes from the Leyden Museum, Vol. XIII.

- fulviventris** Kolbe. *Arch. f. Naturgesch.* LII, 1, Korea.
1886, p. 182; t. 11, f. 25. — Rits. *Notes Leyd. Mus.* XI, 1889, p. 104.
- gemma** Gorh. *Trans. Ent. Soc. London*, 1874, Japan
p. 448 (pars) ¹⁾. — Reitter. *Verhandl. naturf. Ver. Brünn*, XIV, 1876, p. 65;
t. 1, f. 1—5. — Harold. *Abhandl. naturw. Ver. Bremen*, V, 1876, p. 119. —
Rits. *Notes Leyd. Mus.* XI, 1889, p. 104. —
id. *Ann. Mus. Civ. Genova*, XXX, 1891,
p. 888.
- Gestroi** Rits. *Ann. Mus. Civ. Genova*, XXX, Burma.
1891, pp. 893 and 900.
- Gorhami** Olliff. *Cist. Ent.* III, 1883, pp. 53 China.
and 56. — Kolbe. *Arch. f. Naturgesch.*
LII, 1, 1886, p. 181. — Rits. *Notes Leyd.*
Mus. XI, 1889, p. 102.
- Guerinii** Hope. *Coleopt. Manual*, III, 1840, Travancore.
p. 188. — Olliff. *Cist. Ent.* III, 1883,
pp. 54, 56 and 100 (without synonyms);
t. 3, f. 1. — Rits. *Notes Leyd. Mus.* XI,
1889, p. 105.
- guineensis** Rits. *Notes Leyd. Mus.* XI, 1889, Assinia.
p. 108.
- immaculata** Rits. *Ann. Mus. Civ. Genova*, XXX, Burma.
1891, p. 895.
- Kolbei** Rits. *Notes Leyd. Mus.* XI, 1889, China.
p. 103. — id. *Ann. Mus. Civ. Genova*,
XXX, 1891, p. 889.
- laevigata** Oberth. *Coleopt. Novit.* I, 1883, Darjeeling.
p. 59. — Olliff. *Cist. Ent.* III, 1884,
p. 100. — *Aid Ident. Ins.* t. 144, f. 1.

1) A very badly drawn figure of this species is published on plate 138 (fig. 2) of Waterhouse's *Aid to the Identification of Insects*. — If the larva described and figured by Sidney Olliff (*Cist. Ent.* III, p. 52; pl. 3, f. 8) belongs to this or to the foregoing species I cannot say, Mr. Lewis having captured both species.

- longipes** Rits. *Notes Leyd. Mus.* XI, 1889, Sikkim.
p. 101.
- notata** Rits. *Ann. Mus. Civ. Genova*, XXX, Burma.
1891, p. 900.
- Oberthürri** Rits. *Notes Leyd. Mus.* XI, 1889, Darjeeling.
p. 100.
- ocellata** Rits. *Notes Leyd. Mus.* III, 1881, Java.
p. 79. — id. *l. c.* XI, 1889, p. 105.
- pusilla** Oberth. *Coleopt. Novit.* I, 1883, Darjeeling.
p. 60. — Olliff. *Cist. Ent.* III, 1884,
p. 101. — *Aid Ident. Ins.* t. 144, f. 2.
- rotundata** Rits. *Ann. Mus. Civ. Genova*, XXX, Burma.
1891, p. 891.
- scintillans** Olliff. *Cist. Ent.* III, 1884, p. 99. Java.
- semifulva** Rits. *Notes Leyd. Mus.* III, 1881, „
p. 80. — Olliff. *Cist. Ent.* III, 1883,
p. 57. — *Aid Ident. Ins.* t. 153, f. 4.
- serratipennis** Rits. *Ann. Mus. Civ. Genova*, Burma.
XXX, 1891, p. 890.
- Servillei** Hope. *Coleopt. Manual*, III, 1840, Poonah.
p. 187; t. 3, f. 4. — Rits. *Notes Leyd.*
Mus. XI, 1889, p. 100.
- sinensis** Olliff. *Cist. Ent.* III, 1883, p. 54; China.
t. 3, f. 3.
- thibetana** Westw. *Ann. a. Mag. Nat. Hist.* Simlah.
VIII, 1842, p. 123 ¹⁾. — Rits. *Stett.*
Ent. Zeit. 1876, p. 19. — Olliff. *Cist.*
Ent. III, 1883, pp. 54 and 56. — Rits.
Notes Leyd. Mus. XI, 1889, p. 110.
Mellii Westw. *Cab. Orient. Ent.* 1848,
p. 86; t. 41, f. 8. — Rits. *Notes Leyd.*
Mus. XI, 1889, p. 110.
- Vandepolli** Rits. *Notes Leyd. Mus.* XIII, 1891, Borneo.
p. 197.

1) Published in October 1841.

- Vigorsii** Mac L. *Annul. Javan.* 1825, p. 43; Java.
 t. 1, f. 9; *Ed. Lequien*, 1833, p. 152;
 t. 5, f. 4. — *Genera des Coléopt. Atlas*,
 t. 131, f. 2.
var. Rits. *Ann. Mus. Civ. Genova*, XXX, Labuan.
 1891, p. 885. — *id. Notes Leyd. Mus.*
 XIII, 1891, p. 197, note.

SUMMARY OF THE PRINCIPAL DIVISIONS,
 WITH REFERENCE TO THE PAGES.

- p. 223. I. Base of elytra coloured as apex.
 A. Elytra with four convex flavous spots.
 a. Pronotum rugose, with raised patches.
 α. Elytra very regularly punctate striate all over.
 p. 224. β. Elytra punctured in rows near the suture,
 the remaining portion irregularly punctured.
 p. 226. b. Pronotum more finely and evenly punctured,
 without raised patches.
 α. Prosternum entirely fulvous.
 p. 227. β. Prosternum fulvous in the middle, lateral
 portions metallic green.
 p. 228. B. Elytra without flavous spots.
 II. Base of elytra fulvous, apex metallic green
 or black.
 A. Apical portion of elytra metallic green; pro-
 notum entirely fulvous. (Asiatic species).
 B. Apical portion of elytra black; pronotum ful-
 vous at the sides, black along the middle.
 (African species).

Leyden Museum, August 1891.

NOTE XXXV.

TWO NEW SPECIES OF THE LUCANOID GENUS
CYCLOMMATUS, PARRY

DESCRIBED BY

C. RITSEMA Cz.*Cyclommatus Pasteuri*, n. sp. ♂.

(Plate 10, fig. 1).

This magnificent species, the most robust one known up to this day, may easily be recognized by the shape of the strongly porrected clypeus and by the tooth on the outer margin of the under surface of the mandibles near to the base.

Length 54 mm., breadth at the shoulders 14 mm. — The colour of the insect is bronze green with faint coppery tinges, the elytra and upper side of the femora pale yellowish brown with a metallic green and coppery hue; the teeth of the mandibles glossy black, and the palpi and antennae dark pitchy brown; the thickened outer margin of the elytra and the elytral epipleurae are metallic green, the sutural margins narrowly edged with pitchy brown.

The whole insect is sparsely covered with elongate hair-like white scales which on the elytra are only present along the basal and lateral margins and on the epipleurae; on the legs and abdomen these scales are very small, on the tarsi they are wanting; the under surface of the tarsi and of the tibiae and the tip of the mentum are clothed with golden ferruginous hairs.

The mandibles are broadest at the base and strongly curved downwards in their apical half; their outer margin

Notes from the Leyden Museum, Vol. XIII.

15**

rather regularly convex, their inner margin armed, a little before the base, with a small tooth, and midway between this and the large post-median tooth two very small teeth are present, which are accompanied by some inconspicuous undulations of the margin; the ante-apical tooth is strong and obliquely truncate at the tip, and between it and the apex of the mandible are four small teeth. Moreover the mandibles are provided on the outer margin of their under surface, a little before the base, with a very distinct tooth. The mandibles are extremely densely and finely granulated and thereby opaque, with the exception, however, of the tips of the teeth and the apical portion which are glossy.

The upper side of the head shows a large semilunar flattened depression which does not quite extend to the front-margin of the thorax; laterally this depression is bordered by a sharply raised margin, which is continued to the sides in front of the eyes; outside of this margin the sculpture of the head is very rough in consequence of irregularly arranged ridges, the interspaces of which show some punctures. In front of the semilunar depression, the front-margin of which is bisinuate, the head slopes slowly and ends in the middle in a processus which widens out at the tip and has the front-margin broadly emarginate in the middle.

The sides of the prothorax are angular about the middle; the front-margin is accompanied by a very regularly continued narrow groove, and a shallow impression runs along the middle. The sculpture of the pronotum is similar to that of the mandibles and of the depressed and declivous portion of the head, but coarser, especially at the sides, and along the middle the granulations are replaced by some large punctures.

The elytra are subshining in consequence of an extremely fine sculpture which is somewhat coarser at the extreme base and is wanting along the suture where a few small but distinct punctures occur. Two faint longitudinal costae are present on each elytron.

Notes from the Leyden Museum, Vol. XIII.

The under surface of the head and the sterna are densely and finely granulated, the abdomen and femora shallowly punctured, each puncture bearing a narrow white scale. The prosternum is keeled along the middle, and the intercoxal part strongly elevated and, posteriorly, compressed. The metasternum has, just behind each intermediate coxa, an excavation, which excavations are separated by the raised anterior portion of the central line.

The fore-tibiae are straight, not very elongate, and without any spine on the outside.

The described male-specimen, a representative of the *forma maxima*, originates from Padang Sidempoean (Tapanoeli Residency: West Sumatra) and has been offered last year to the Leyden Museum, together with other very interesting beetles from the same locality, by Mr. J. D. Pasteur, whose name I have much pleasure in associating with this conspicuous species.

Cyclommatus canaliculatus, n. sp. ♂, ♀.

Likewise a very interesting species and easily recognizable by the very distinct median groove on the pronotum, which groove becomes deeper towards the base in consequence of the raising margins. Moreover the outer upper margin of the mandibles is notched at some distance from the tip so as to form here a small tooth.

Length of a male of the *forma maxima* 50 mm., breadth at the shoulders 11 mm. — Dark red-brown, with faint tinges of metallic green and purple, the margins of the mandibles and of the prothorax, the front-margin of the head and the outer margin of the elytra blackish; the antennae and tarsi pitchy black, the upper side of the femora pale yellowish brown.

The whole insect is sparsely (from abrasion?) covered with small ovate dirty grey scales; the tarsi are glabrous with the exception of the under surface which is densely covered with pale ferruginous hairs.

Notes from the Leyden Museum, Vol. XIII.

The mandibles are long, as long as the distance between the front-margin of the head and the posterior coxae, their outer margin is straight at the basal third, thence slowly curved inwards and downwards, their inner margin armed at about one third of its length with a strong tooth which is slightly directed forward; between the ante-apical tooth, which is obliquely truncate at the tip, and the apex of the mandible three small teeth are present. On the apical third of the mandibles the outer upper margin rises slowly, but opposite the front-margin of the ante-apical tooth this raised margin ends suddenly so as to form here a small toothlike projection. The mandibles are densely and extremely finely granulated, sub-opaque, with the exception, however, of the apical portion which is glossy.

The upper side of the head shows a large flattened depression, which extends as far as the front margin of the thorax; laterally the margin of this depression is slightly raised and joins the sides of the head in front of the eyes; outside of this depression the head is roughly sculptured, the sculpture of the depression itself is similar to that of the mandibles but somewhat coarser. The front-margin of the head between the outer margins of the mandibles is broadly bisinuate, and beneath it the head is deeply excavated; the clypeus is slightly declivous, its front-margin bisinuate, the middle lobe slightly upturned.

The sides of the prothorax have an angular tooth about the middle; the front-margin is accompanied by a groove which is interrupted in the middle and widened out towards the sides; along the middle a distinct groove is present ¹⁾, which at the base of the thorax becomes deeper in consequence of the raising margins. The pronotum is very densely sculptured, and the narrow interspaces are irregularly flowing together.

The elytra are rather densely covered with very distinct punctures, very densely however along the base and sides;

1) A faint continuation of this groove is to be observed on the base of the head.

each elytron shows two indistinct costae, of which the outermost runs along a raised streak ending in the apical callus, and moreover a longitudinal impression commencing behind and just within the shoulder and obliquely widening out towards the suture.

The sculpture of the under surface is very fine, with a few large punctures on the glossy portions of the head. The prosternal process is narrow and conically projecting. The fore-tibiae are straight and unarmed.

Length of a male of the *forma media* 36 mm., breadth at the shoulders $8\frac{1}{2}$ mm. — Agreeing with the *forma maxima*, but the colours are brighter and the insect is more densely covered with scales.

The mandibles are shorter, having the length of the distance between the front-margin of the head and the intermediate coxae; they are more regularly curved inwards along their whole length, and the strong ante-basal tooth is replaced, very near to the base, by a broad process which is bicuspidate on the left, tricuspidate on the right mandible.

The front-margin of the head between the outer margins of the mandibles is broadly emarginate forming a regularly curved line; at this line the head sinks suddenly down towards the clypeus which is declivous and similar in shape to that of the *forma maxima*; the middle lobe of the front-margin, however, is not upturned.

On the thorax the groove which accompanies the front-margin is inconspicuous, and that along the middle less distinct, but at the base the raised margins are still observable.

The longitudinal impressions on the elytra are less distinct, and the prosternal process not so strongly projecting. The tibiae are likewise unarmed.

Length of a female $18\frac{1}{2}$ mm., breadth at the shoulders $6\frac{1}{2}$ mm. — The colour is dark red-brown, the upper side of the femora, however, pale yellowish brown, the tarsi, antennae, palpi and apical half of mandibles pitchy black. The head has a round spot on the centre and another behind each eye blackish with a bronze hue; the central

Notes from the Leyden Museum, Vol. XIII.

one is convex. On the pronotum two stripes, an elongate central spot and a spot on the middle of the sides touching the margins are bronze black, and these markings are more or less united along the margins of the thorax. The scutellum and the sutural and lateral margins of the elytra are blackish, the latter with a bronze hue, and an indistinct infusate stripe runs from the shoulders backwards. The punctuation is strong, somewhat finer but closer set on the elytra than on the head and pronotum. The under surface is bronze coloured and, as well as the legs, covered with a scale-bearing punctuation. Besides the apical tooth, the fore-tibiae have on their outer margin three sharp teeth which become larger towards the end of the tibiae; the middle- and hind tibiae are armed beyond the middle with a distinct tooth.

Hab. The island of Nias, West of Sumatra. — The described three specimens were presented to the Leyden Museum by Mr. J. D. Pasteur.

As yet only five species of Lucanidae are known from Nias, and these are all-together represented in the Leyden Museum, viz. *Cyclommatus Maitlandi* Parry, *Cyclommatus canaliculatus* Rits., *Odontolabis gracilis* Kaup, *Odontolabis inaequalis* Kaup and *Eurytrachelus Titan* Boisd.

N.B. Together with *Cyclommatus Pasteuri* Rits. ♂, the following beetles are represented on plate 10:

- Fig. 2. *Lamprophorus nepalensis* Gray, bred from the larva (fig. 2^a) by Mr. J. D. Pasteur (see: Tijdschrift voor Entomologie, Vol. XXXIV (1891), p. cxiv).
- Fig. 3. *Noëmia apicicornis* Rits. ♂, from East Sumatra (Notes Leyden Museum, XII (1890), p. 136).
- Fig. 4. *Eurybatus inexpectatus* Rits. ♂, from East Java (Notes Leyden Museum, XII (1890), p. 135).
- Fig. 5. *Thermonotus Pasteuri* Rits. ♂, from Nias (Notes Leyden Museum, XII (1890), p. 248).
- Fig. 6. *Atossa bipartita* Rits. ♀, from Borneo (Notes Leyden Museum, XII (1890), p. 250).

Leyden Museum, September 1891.

Notes from the Leyden Museum, Vol. XIII.

NOTE XXXVI.

LOMOTROPA VELLERIALIS,
NOUVELLE ESPÈCE DE PYRALIDE

DÉCRITE PAR

P. C. T. SNELLEN.

Un mâle en assez bon état. Envergure 46 mm. — Quoique cette espèce, dans le seul sexe connu jusqu'ici, se distingue fortement du mâle de la *costiflexalis* Guen. par les ailes postérieures plus larges, dont la surface est totalement revêtue de poils assez longs et soyeux mais dont le bord intérieur ne possède pas de ciliation blonde touffue, elle est d'ailleurs très-conforme à cette espèce quant aux autres caractères génériques. Je renvoie pour ceux-ci au travail de feu Lederer, Wien. Ent. Monatschr. VII (1863), et je n'hésite pas à placer ma nouvelle espèce dans le genre *Lomotropa*.

Palpes moitié blancs et brun grisâtre, ne dépassant pas le front, comme chez *costiflexalis*. Vertex brun grisâtre, finement bordé de blanc. Le collier et le thorax sont endommagés, mais le dernier montre encore des traces de lignes longitudinales jaunes comme chez l'autre espèce. Antennes sétacées, avec une ciliation très-courte et de plus sur chaque anneau avec un poil plus long. Ce dernier caractère manque chez l'espèce déjà connue.

Ailes antérieures d'un gris-brun bronzé, noirâtre vers la base, marqués de taches blanches comme chez *costiflexalis* mais à contour moins précis, elles ressortent chez cette dernière plus distinctement sur le fond gris-violet unicolore. Cependant, chez *vellerialis* la série de trois taches blan-

Notes from the Leyden Museum, Vol. XIII.

ches contigues le long du bord terminal manque. Les ailes postérieures sont sans dessin; elles ont pour ornement la toison touffue et soyeuse d'un gris de souris mentionnée plus haut. Frange grise.

Dessous des ailes d'un gris clair à léger reflet bronzé; sur les ailes antérieures on aperçoit les mêmes taches blanches qu'en dessus mais très-peu distinctes. La moitié basale des ailes postérieures est blanche, la seconde est marquée d'une bande blanche élargie vers le sommet, à partir de la nervure 5.

Abdomen à dos gris, marqué de deux lignes blanches interrompues, ventre blanc comme la poitrine et les pattes; tarsi de celles-ci légèrement rembrunis, les genoux et les tibias antérieurs marqués d'une petite tache brunâtre.

Hab. Iles Obi. — Capturé par feu Mr. Bernstein. (Musée de Leyde).

Rotterdam, Septembre 1891.

NOTE XXXVII.

A NEW MAMMAL FROM SUMATRA

BY

Dr. A. A. W. HUBRECHT.

A few years ago a new and interesting mammal, which is exceedingly rare, even in its native haunts, was brought to the then Resident of Palembang, Mr. A. Pruys van der Hoeven. This gentleman who is not only an eager sportsman, but also well-versed in natural history, recognised it to be new to science and to be more closely allied to certain representatives of the Edentata, than to any other order of mammals. — The type-specimen was held in captivity for several weeks, was fed on ants and afterwards on cooked rice and was sent alive to Europe in order to be examined, described and ultimately preserved in the Royal Museum at Leyden. It unfortunately died on board the vessel, on its way to Holland, and by an unaccountable blunder on the part of one of those in charge, its remains were not preserved, but thrown overboard.

During my own stay in Sumatra from February till May 1891 I took particular trouble to obtain further information concerning this animal and have found the fact of its existence — though at the same time of its exceeding rarity! — confirmed in a way which does not allow me to doubt that ere long further specimens will be available for a thorough examination, also with respect to anatomical detail. My own attempts to secure a second specimen have as yet not been successful, but as they have turned the attention of many persons towards this animal I feel bound,

Notes from the Leyden Museum, Vol. XIII.

in deference to the claims to priority of its original discoverer, who has put his preliminary description as well as sketches of the animal at my disposal, to introduce this peculiar mammal into science, notwithstanding the type-specimen has been lost. The generic name has been selected, not with a view of indicating any closer anatomical relation with the genus *Manis*, but only to indicate that a hairy anteater is meant.

Trichomanis hoevenii, n. g. et n. sp.

Animal of the size of a very large cat. Fur grey, with a black longitudinal band along the middle of the back. Snout elongated and conical, with a small mouth at the extremity. A long cylindrical tongue, which is thrust out, serves the animal in the collecting of ants, which are its natural food. A more or less bushy tail. Ears not conspicuous. Legs higher than those of *Manis*, strong claws to the feet.

I have no doubt that this description — however superficial — is more than sufficient to recognise the animal as soon as it will have been reobtained. The type-specimen was caught in the mountainous districts that separate the Residencies of Palembang and Bencoolen in Sumatra.

Utrecht, September 7, 1891.

NOTE XXXVIII.

DESCRIPTION DE NEUF ELATÉRIDES NOUVEAUX
DU MUSÉE DE LEYDE

PAR

E. CANDÈZE.*Lacon angulicollis*, n. sp.

Brunneus, dense *fulvo-pilosulus*; *prothorace* longitudine paulo latiore, *lateribus* basi *crenulatis* et ante medium *angulatim flexis*, *dorso æquali*; *elytris* ante medium *dilatatis*, *postice attenuatis*, *leviter striato-punctatis*; *subtus sulcis tarsalibus destitutus*. — Long. 8 mill., lat. $2\frac{3}{4}$.

Hab. Java.

Non loin de *litigiosus*. Il a pour caractères principaux l'absence de sillons tarsaux, l'uniformité de couleur des téguments et de la vestiture, les premiers bruns, la seconde fauve, la structure des bords latéraux du *prothorax* qui sont légèrement crénelés en arrière et coudés vers le tiers antérieur.

Trois exemplaires ont été trouvés par M. J. D. Pasteur dans l'ouest de Java. J'en possède, d'autre part, un grand nombre réunis dans l'est de l'île.

Lacon feralis, n. sp.

Brunneus, confertissime *squamulis minutis fulvescentibus* obductus; *prothorace subquadrato*, paulo convexo, *dorso æquali*, *angulis posticis tumidis*, *apice rotundatis*; *elytris striatis*, *striis minute punctatis*, *interstitiis convexis*, *basi fere carinatis*; *subtus sulcis tarsalibus destitutus*. — Long. 21 mill., lat. 6 mill.

Hab. Sumatra occidentalis: Mandeling.

Notes from the Leyden Museum, Vol. XIII.

L'une des grandes espèces du genre. Sa vestiture jaunâtre est assez dense pour cacher la couleur foncière brune des téguments. Les flancs du prothorax et du métathorax n'ont pas de sillons pour recevoir les tarses au repos; le second n'en présente que des traces peu prononcées. Il est encore caractérisé par les intervalles des stries des élytres convexes. Sa place est près du *L. discedens*.

Un seul exemplaire présenté par M. le Dr. H. J. Veth.

Anthracalaus Pasteuri, n. sp.

Nigerrimus, nitidissimus, glaber; antennis articulo quarto triangulari, sequentibus sensim angustioribus; fronte inæquali; prothorace latitudine paulo longiore, versus basin coarctato, lateribus et antice grosse punctato, medio parce punctulato, angulis posticis carinatis, carina prolongata; scutello brevi, tumido; elytris brevibus, a basi attenuatis, striis destitutis, levissimis. — Long. 26 mill., lat. 9 mill.

Hab. Ile Nias.

Cette belle espèce, que je dédie à M. J. D. Pasteur qui en a reçu un seul exemplaire de l'île citée ci-dessus, est la troisième du genre *Anthracalaus*, genre établi par M. Fairmaire pour les *Alaus* noirs et glabres. Celle-ci se distingue de l'*A. Westermanni*, le plus anciennement connu, par ses élytres sans stries, et du second, l'*A. Moricei*, de Cochinchine, par les angles postérieurs du prothorax fortement carénés. La carène en question est très rapprochée du bord externe et va se réunir à lui non loin des angles antérieurs. Il se fait remarquer par la brièveté relative des élytres et leur atténuation graduelle d'avant en arrière qui leur donne une forme de triangle allongé.

Megapenthes sexmaculatus, n. sp.

Fusco-castaneus, parum nitidus, fulvo-pubescent; antennis ferrugineis; prothorace latitudine vix longiore, a basi angustato, regulariter sat dense punctato, basi flavescente, angulis posticis acute bicarinatis, retrorsum productis; elytris fortiter

Notes from the Leyden Museum. Vol. XIII.

punctato-striatis, apice integris, maculis sex flavescens; epipleuris pedibusque flavis. — Long. 8 mill., lat. 2 mill.

Hab. Sumatra oriental: Deli.

Les taches jaunes des élytres, genre de coloration exceptionnelle chez les *Megapenthes*, lui donnent un faciès d'*Æolus*. Ces taches sont disposées, les deux premières basilaires, les quatre autres marginales, à la moitié et avant l'extrémité des élytres.

Un seul spécimen, présenté par M. le Dr. H. J. Veth.

Megapenthes sericeus, n. sp.

Brunneus, nitidus, pube flavescens sericea vestitus; prothorace latitudine longiore, convexo, regulariter punctato, basitantum sulcato, angulis posticis bicarinatis; elytris punctato-striatis, apice fortiter emarginatis; subtus pedibusque concoloribus, his basi paulo pallidioribus. — Long. 12—14 mill., lat. 3—4 mill.

Hab. Sumatra oriental: Deli.

J'en ai vu trois exemplaires, présentés par le Dr. H. J. Veth, dont la taille varie beaucoup. L'espèce ne présente aucun caractère bien saillant, si ce n'est son aspect un peu soyeux dû à la pubescence.

Sa place est dans le groupe dont le *marginatus* est le type.

Cardiophorus gramineus, n. sp.

Niger, nitidus, discrete pilosulus; antennis nigris, articulo primo apice rufo; prothorace latitudine vix longiore, minus convexo, subtiliter discrete et irregulariter punctulato, angulis posticis haud pubescentioribus; elytris flavis, depressis, punctato-striatis, regione scutellari, apice maculaque laterali male definita nigris; subtus niger, pedibus flavis, femoribus nigris, unguiculis minutis simplicibus. — Long. 5½ mill., lat. 1¾ mill.

Hab. Java occidental.

Un seul exemplaire trouvé par M. J. D. Pasteur. J'ai fait connaître récemment un *Cardiophorus* de Birmanie, le *C. seminalis*, à ongles simples, noir, à élytres jaunes ma-

culées latéralement de noir. Celui-ci est manifestement une espèce voisine, au moins sous le rapport de la coloration toute particulière; toutefois il est un peu plus grand, son prothorax est moins bombé, autrement ponctué, moins pubescent aux angles postérieurs et les taches noires des élytres autrement disposées.

Penia dubia, n. sp.

Brunneo-ferruginea, nitida, pallide longe pubescens; antennis brunneis; prothorace trapezoideo, longitudine paulo latiore, fere plano, subtilissime punctulato; elytris prothorace latioribus, punctato-substriatis, basi tantum striis fortiter impressis; tarsis bilamellatis. — Long. 10 mill., lat. 4 mill.

Hab. Java.

M. Pasteur a recueilli quatre spécimens de cette nouvelle espèce dans l'ouest de Java. Elle paraît, du reste, habiter toute l'île, car, de mon côté, je l'ai reçue en grand nombre des régions voisines de Sourabaia.

Ludius aemulus, n. sp.

Rufo-ferrugineus, nitidus, pube tenui concolore obductus; fronte paulo obscuriore, regulariter convexo et punctato; prothorace latitudine longiore, punctato, a basi angustato, dorso æquali, basi cum scutello sensim obscurioribus; elytris parum convexis, punctato-striatis, interstitiis punctatis antice gradatim subgranulatis, apice anguste emarginatis nigrescentibusque. — Long. 12 mill., lat. $2\frac{3}{4}$.

Hab. Java occidental.

Le prothorax est sensiblement d'un rouge ferrugineux plus brillant que les élytres. Sa forme plus aplatie et sa pubescence moins apparente le distinguent bien des autres *Ludius* indiens de même taille et également ferrugineux. Je n'ai vu que deux exemplaires, trouvés par M. Pasteur.

Agonischius taeniatus, n. sp.

Obscure æneus, elongatus, flavo-pubescens; fronte rufa, rugosa; antennis nigris, serratis, articulo tertio sequentibus

¹ Notes from the Leyden Museum, Vol. XIII.

simili; prothorace latitudine longiore, rufescente, æneovittato, strangulato, crebre fortiterque punctato, angulis posticis bivaricatis, subbicarinatis; elytris prothorace latioribus, dorso depressis, fortiter punctato-striatis, obscure flavescens, regione suturali antice lateribusque æneis. — Long. 10 mill., lat. 2 mill.

Hab. Java occidental.

Cet *Agonischius* appartient à un groupe d'espèces allongées, à corselet étranglé, s'éloignant par le faciès de la majorité des espèces du genre. J'ai fait connaître autrefois, sous le nom de *Corymbites coarctatus*, un Elatéride de Java qui, étant donné l'adjonction ultérieure des espèces en question, serait mieux placé dans le genre actuel.

Deux spécimens, capturés par M. J. D. Pasteur.

Glain-lez-Liége, Septembre 1891.



ARCHEY THOMAS DEMERY.

A few weeks ago we received the sad news from Robertsport of the decease of our Liberian collector A. T. Demery. This is a great loss for the sake of zoological investigation in Liberia and the neighbouring districts of Sierra Leone, and especially for our Museum which, by this death, loses its last direct connection with that part of Western Africa. As the readers of our "Notes" will remember, the collections received from Mr. Demery since about a year were very interesting, and amongst many objects contained several novelties. His last collection, made on the Sulymah River, is expected in here every day, and as soon as we will have received it, an ample list will be prepared of the birds collected by him on the mentioned river.

Leyden, Oct. 12th 1891.

J. BÜTTIKOFER.

Notes from the Leyden Museum, Vol. XIII.

NOTE XXXIX.

A NEW ORIENTAL SPECIES OF THE COLEOPTEROUS
GENUS CHELONARIUM

DESCRIBED BY

C. RITSEMA Cz.

Chelonarium dorsale, n. sp.

Length 7 mm. — Elongate elliptical, much more broadly rounded in front than behind, convex (above and beneath) in the transverse as well as in the longitudinal direction so that the insect is highest just before the middle of its length. Subshining, pitchy brown, darker above than beneath and than the legs and antennae, the tarsi and the short antennal joints pale rusty red; the whole insect covered with a tomentose pubescence and moreover, especially on the upper surface, with long erect hairs; the colour of the entire pubescence is greyish yellow with the exception of an ill-defined transverse spot on the highest portion of the back where the hairs are black, which spot is very conspicuous when the insect is seen sideways.

Head entirely hidden under the prothorax, strongly and densely punctured. — Prothorax distinctly broader than long, slightly narrower than the elytra, very broadly rounded and sharply edged in front, the front-margin slightly up-turned, the sides constricted before the posterior angles so as to make the latter divergent; the basal margin bisinuate, the middle-lobe subtruncate with rounded angles; the pronotum equally and rather densely covered with very distinct punctures. Scutellum as long as broad, with strongly curved

Notes from the Leyden Museum, Vol. XIII.

sides and rounded tip. — Elytra rather finely and irregularly punctured, having here and there the appearance of being faintly rugose, and showing traces of faint costae; the shoulders are prominent in consequence of a shallow impression along the base and a narrow deeper one along the basal portion of the lateral margins. — The under surface is very densely punctured.

Hab. Java occid. — Captured by Mr. J. D. Pasteur, who presented four specimens to the Leyden Museum.

Together with these four specimens, and from the same sources, I received two others which agree perfectly with the described ones, but they are smaller (measuring 6 mm. in length), the prothorax is more narrowly rounded in front and consequently of a narrower shape, and the pubescence is denser and of a more yellow colour. Most probably these two specimens are males, the four larger ones females.

If the above described species, which is very closely allied to *Ch. unifasciatum* Reitt. from East Sumatra (Notes Leyd. Mus. Vol. VIII, p. 219), did not possess the spot of black pubescence on the middle of the back, I should have meant to have Macleay's *Ch. villosum* before me, the short description of which (see Notes Leyd. Mus. Vol. XI, p. 47) being for the rest pretty well applicable to my insect.

Leyden Museum, October 1891.

NOTE XL.

FURTHER CONTRIBUTIONS TO THE KNOWLEDGE
OF THE HELOTA-SPECIES OF BURMA ¹⁾

BY

C. RITSEMA Cz.

Mr. René Oberthür of Rennes again sent me for identification four *Helota*-specimens from Upper-Burma, collected by Mr. Doherty in the neighbourhood of the „Mines des Rubis” at an elevation of 1200—2300 meter above the level of the sea.

These specimens belong to three species of which two are new to science; the third species, *Helota notata* Rits. ²⁾, was represented by a female specimen which is now in the collection of the Leyden Museum.

Helota ventralis, n. sp. ♀.

This species is closely allied to and strongly resembles *Helota Kolbei* Rits. ³⁾ from China, but is at once distinguished from it by the colour of the abdomen, this being bright coloured all over, not darker along the middle, by the bright colour of the femora, and by the less prolonged apices of the elytra.

Length 17—18 mm. — The entire upper surface bronze coloured, here and there with coppery and purple tinges;

1) Ann. Mus. Civ. di Genova, Vol. XXX (1891), pp. 885 and 898.

2) Ann. Mus. Civ. di Genova, Vol. XXX (1891), p. 900.

3) Notes Leyd. Mus. Vol. XI (1889), p. 103.

the two basal joints of the antennae red, the succeeding ones gradually passing into dark pitchy, the apical joint pale rufous; each elytron provided between the 3rd and 6th striae with two small convex flavous spots. Underneath the head, the pro- and mesosternum and the elytral epipleurae are coloured like the upper surface, the metasternum and abdomen however are of a uniform bright reddish testaceous colour, the former with the hinder margin and an impressed line along the middle, black; the legs are reddish testaceous with the coxae and trochanters, the apex of the femora and the base and apex of the tibiae black, the tarsi dark pitchy brown approaching to black.

Head strongly produced in front of the eyes, slightly raised along the middle, deeply punctured, the punctures on the raised portion large and remote, near the eyes they are smaller and closely set, on the narrowed front portion they are fine and remote; underneath the middle portion is sparsely and finely, the lateral portions strongly punctured.

Prothorax widest at the base, narrowing towards the front in slightly curved lines; the front angles strongly produced, rounded; the sides crenulate on their anterior half; the base deeply bisinuate, the lateral angles acute, the central lobe rounded and with a more or less distinct impression; the disk strongly and very closely punctured, with the usual raised impunctate patches. The scutellum is small and slightly transverse. The sterna are impunctate, the lateral portions of the pro- and metasternum, however, remotely covered with rather large punctures.

Elytra parallel, conjointly but not broadly rounded behind, the apices which are not dehiscent are but very little prolonged; each elytron with ten rows of punctures of which the 4th and 5th are interrupted by the flavous spots and are not continued behind the posterior ones; on the shoulders the punctuation becomes obsolete; the punctures in the rows become gradually larger towards the sides; the five inner interstices are rather broad and flat, the remaining outer ones narrow and costiform, and these

Notes from the Leyden Museum, Vol. XIII.

latter are often interrupted by deeply impressed punctures; the 3rd and 5th interstices show some large punctures; the interstice between the 2nd and 3rd striae becomes costiform towards the end and extends to the extreme tip of the elytra; the epipleurae are impunctate.

The abdomen is distantly covered with extremely fine but distinct punctures, and the segments have an ill-defined impression at the sides; the apical segment is not quite as long as the 3rd and 4th taken together and regularly rounded behind.

The legs are smooth, sparsely and extremely finely punctured, the anterior tibiae more distinctly punctured.

Two female specimens, one of which is now in the collection of the Leyden Museum.

Helota affinis, n. sp. ♀.

Closely allied to *Helota dubia* Rits.¹⁾ and strongly resembling it. In the new species, however, the flavous spots on the elytra are larger, the front angles of the prothorax are much more broadly rounded, and the apices of the elytra are less acuminate.

Length 8½ mm. — Very narrow and elongate, somewhat narrower than *dubia*; shining, above metallic green with bronze and coppery tinges; the antennae pale reddish testaceous, the terminal joint of the club infusate; each elytron provided with two proportionately large flavous spots which are narrowly surrounded with bluish black; the anterior spot is situated between the 3rd and 7th striae, the posterior one between the 3rd and 8th. Underneath the head (except the throat), the lateral portions of the prosternum and the elytral epipleurae are bright golden green, the rest is testaceous; the legs reddish testaceous with the apex of the femora and the basal half of the tibiae metallic green; on the tibiae the green colour is slightly continued

1) Ann. Mus. Civ. di Genova, Vol. XXX (1891), p. 901.

along the outer margin; the tarsi (except the testaceous basal half of the claw-joint) pitchy.

Head strongly and rather densely punctured; on the narrowed front-portion the punctures are much finer.

Prothorax subtrapezoidal, the sides nearly straight, faintly constricted a little before the base, and crenulate; the anterior angles very broadly rounded, not at all prominent, the posterior ones acute and divergent; the front-margin straight, the base bisinuate, the median lobe narrowly rounded. The disk is somewhat irregularly covered with very large and deep punctures which are closer set towards the sides; in front of the scutellum an impunctate streak is present. The impunctate scutellum is small and strongly transverse.

Elytra very elongate, slightly narrowing towards the end and here separately rounded in an angular way. Each elytron with ten regular striae of punctures which become larger towards the sides; the 3rd and 9th interstices are strongly costate on the apical portion and join the margin.

Under surface of the head with a few distinct punctures on the middle, strongly punctured on the sides, the throat impunctate; the metallic lateral portions of the prosternum deeply but not very densely punctured; the legs apparently impunctate, the metallic coloured portions, however, with a few distinct punctures; the anterior tibiae straight; the tarsi very slender and elongate.

A single female specimen which is in the possession of Mr. René Oberthür.

Leyden Museum, October 1891.

NOTE XLI.

LIST OF REPTILES BROUGHT FROM SIAM
BY Mr. R. C. KEUN

DRAWN UP BY

Dr. Th. W. van LIDTH de JEUDE.

In the beginning of this year Mr. R. C. Keun, formerly Consul of the Netherlands at the empire of Siam, presented the Leyden Museum with a small collection of Reptiles from the neighbourhood of Bangkok. As Mr. Keun, because of ill-health, resigned his honourable employment, he will not be in a position again to add other Siamese specimens to those we have already received, and it is therefore that I give a list of this valuable collection, the more valuable as the Reptiles of the Indian continent are very poorly represented in our Museum, those of Mr. Day's precious collection ¹⁾ being almost our sole representatives of the Indian herpetological fauna.

In making up this list I follow the nomenclature and the arrangement adopted by Mr. G. A. Boulenger in his »Reptilia and Batrachia» in »the Fauna of British India» except in his adoption of the genus *Trimeresurus* Lacépède. The sole characteristic that, according to Lacépède, separates the snakes of the genus *Trimeresurus* from all other Opisthoglypha and Proteroglypha is the peculiar arrangement of the subcaudals. This characteristic is not

1) Described by Dr. A. A. W. Hubrecht in »Notes from Leyden Museum», IV, p. 138.

to be found in one of the species belonging to the genus *Trimeresurus* according to Mr. Boulenger. Moreover the species first described by Lacépède, viz. *Trimeresurus leptocephalus* (a snake in my opinion very closely related to *Naja porphyriaca* Shaw and *Naja australis* Gray, both agreeing in having the peculiar arrangement of the sub-caudals described by Lacépède) can by no means be classed in the genus *Trimeresurus* according to Mr. Boulenger. I think it better to adopt Wagler's genus *Bothrops* and, if it should be found desirable to preserve Lacépède's genus *Trimeresurus*, I would substitute it for Wagler's genus *Pseudechis*.

Mr. Keun's collection consists of 14 specimens belonging to 12 species, viz. 11 species of Ophidia and 1 species of Batrachia apoda.

Ophidia.

1. *Cylindrophis rufus* Laur.
2. *Hydrophobus davisonii* Blanf.
3. *Simotes cyclurus* Cant.
4. *Zamenis korros* Schleg.
5. *Tropidonotus subminiatus* Schleg.
6. " *piscator* Schneid.
7. *Dryophis mycterizans* Daud.
8. *Chrysopelea ornata* Shaw.
9. *Homalopsis buccata* L.
10. *Hypsirhina enhydria* Schneid.
11. *Bothrops gramineus* Shaw.

Batrachia apoda.

12. *Ichthyophis glutinosus* L.

Leyden Museum, October 1891.

INDEX.

A.

Abisara [138](#), [139](#).
 abnormis (Sasia) [123](#).
 abseus (Amblypodia) [140](#).
 Acca [136](#).
 Aceraius [131](#).
 aceris (Neptis) [136](#).
 Acherus [167](#), [173](#).
 Achrionota [161](#), [163](#).
 Aconthea [138](#).
 Acridotheres [122](#).
 Actaea [1](#), [2](#), [3](#), [13](#).
 Actaeodes [1](#), [2](#), [4](#), [13](#), [61](#).
 acuminatus (Latirus) [158](#).
 acutus (Gelasimus) [21](#), [25](#), [30](#), [33](#), [61](#).
 addendus (Valgus) [187](#).
 Adolias [131](#), [132](#), [137](#).
 aegistus (Papilio) [142](#).
 Aegle [1](#).
 aegyptus (Euploea) [134](#).
 aelianus (Lampides) [139](#).
 aemulus (Ludius) [246](#).
 " (Protoceries) [150](#).
 aenea (Carpophaga) [129](#).
 Aeolus [245](#).
 Aethopyga [126](#).
 affinis (Caprimulgus) [125](#).
 " (Helota) [253](#).
 " (Terpsiphone) [125](#).
 africana (Helota) [228](#), [229](#).
 agamemnon (Papilio) [131](#), [142](#).
 agassizii (Ozius) [16](#).
 agenor (Papilio) [142](#).
 Agestrata [135](#).
 agleoïdes (Danaïs) [134](#).
 agnis (Narathura) [140](#).
 Agonischius [246](#), [247](#).
 alankara (Aconthea) [138](#).

Alaus [244](#).
 albiceps (Sciurus) [209](#).
 alboguttata (Protaetia) [187](#).
 alcathoë (Euploea) [133](#), [134](#).
 Alcedinidae [124](#).
 Alcedo [124](#).
 alcyone (Callidryas) [141](#).
 " (Papilio) [141](#).
 alkamah (Allotinus) [139](#).
 allardi (Ommatolampus) [116](#).
 Allotinus [139](#).
 alluaudi (Orectogyrus) [194](#).
 Alma [84](#).
 alpheda (Adolias) [137](#).
 Amathusia [136](#).
 amblyonyx (Dactylomys) [105](#), [106](#),
 [108](#), [109](#), [110](#).
 amblyonyx (Kannabateomys) [105](#),
 [109](#), [110](#).
 Amblypodia [133](#), [140](#), [141](#).
 amphissina (Lycæna) [139](#).
 amrita (Neocheritra) [139](#).
 " (Sithon) [139](#).
 anaglyptus (Etisus) [1](#), [2](#).
 analis (Chalcosia) [143](#).
 " (Pycnonotus) [127](#).
 anapita (Mycalesis) [135](#).
 anarte (Amblypodia) [140](#).
 andamanensis (Cynopterus) [202](#).
 andersoni (Logania) [139](#).
 angelica (Prothoë) [138](#).
 angularis (Orectogyrus) [192](#).
 angulicollis (Læon) [243](#).
 angustifrons (Gelasimus) [1](#), [38](#), [61](#).
 angustipennis (Protoceries) [150](#).
 annulipes (Gelasimus) [1](#), [23](#), [39](#),
 [40](#), [41](#), [42](#), [43](#).
 Anoa [217](#), [220](#), [221](#).
 Anochilia [196](#).

Anodonta [114](#).
 Anomala [131](#).
 Anoxyopisthen [120](#).
 Anteus [77](#), [78](#), [82](#).
 Antheraea [133](#), [134](#).
 Anthracalaus [244](#).
 Anthracophora [187](#).
 Anthreptes [126](#).
 Anthus [210](#).
 antimuta (Amblypodia) [140](#).
 antiphates (Papilio) [133](#).
 Apatura [138](#).
 apicicornis (Noëmia) [238](#).
 apidanus (Amblypodia) [133](#), [140](#).
 aquila (Fregata) [130](#).
 Arachnothera [126](#).
 aratus (Lycaena) [139](#).
 arcuatus (Gelasimus) [1](#), [21](#), [25](#), [26](#),
 [27](#), [28](#), [29](#), [30](#), [32](#), [33](#), [36](#), [61](#).
 Ardeidae [129](#).
 ardens (Pericrocotus) [125](#).
 areolatus (Actaeodes) [13](#).
 Areoturnix [129](#).
 ares (Euschema) [144](#).
 ariadne (Ergolis) [135](#).
 armatum (Cardisoma) [19](#).
 arsinoë (Cynthia) [138](#).
 Artamidae [125](#).
 Artamus [125](#), [212](#).
 aruensis (Sus) [98](#).
 aspasia (Danaïs) [134](#).
 Atherina [176](#).
 Athyma [136](#).
 Atossa [238](#).
 atticus (Tagiades) [142](#).
 Aulacochoerus [86](#).
 aurago (Cathaemia) [133](#), [141](#).
 aurosericea (Mygymia) [131](#).
 australis (Naja) [256](#).
 avellanarius (Muscardinus) [66](#), [67](#),
 [68](#), [69](#), [70](#), [71](#), [72](#), [73](#), [74](#).
 azurea (Hypothymis) [125](#).

B.

Babirussa [85](#).
 baldus (Yphthima) [135](#).
 barbatus (Sus) [94](#).
 barbimanus (Heterograpsus) [53](#).
 Batrachia [256](#).
 bellator (Gelasimus) [35](#), [38](#).
 bellonaria (Euschema) [144](#).
 " (Hasis) [144](#).
 bicolor (Carpophaga) [129](#).
 " (Merops) [124](#).
 Biduanda [140](#).

Bifa [67](#).
 bifasciata (Pseudoblabe) [143](#).
 bitasciatus (Otidognathus) [149](#).
 bifida (Anochilia) [196](#).
 " (Cetonia) [196](#).
 " (Dysephicta) [196](#).
 " (Schizorrhina) [196](#).
 bilineata (Achrionota) [161](#), [163](#).
 billitonensis (Antheraea) [133](#), [134](#).
 bipartita (Atossa) [238](#).
 Birnara [143](#).
 blumei (Adolias) [137](#).
 boisduvalii (Biduanda) [140](#).
 bolina (Diadema) [137](#).
 borneoensis (Orthotomus) [127](#).
 boswelliana (Iraota) [140](#).
 Bothrops [256](#).
 boysii (Helota) [228](#), [229](#).
 brachyotis (Cynonycteris) [203](#).
 " (Cynopterus) [202](#), [203](#),
 [204](#).
 " (Pachysoma) [202](#).
 brachyotus (Cynopterus) [202](#).
 Brachypodidae [127](#).
 Brachypodius [127](#).
 Brachypteryx [127](#).
 brachyurus (Micropternus) [123](#).
 brasiliensis (Titanus) [79](#).
 Brentidae [161](#).
 brevicaudatum (Pachysoma) [203](#).
 brevis (Helota) [199](#), [227](#), [229](#).
 brunneicauda (Hyloterpe) [126](#).
 buccata (Homalopsis) [256](#).
 Buceros [123](#).
 Bucerotidae [123](#).
 büttikoferi (Orectogyrus) [192](#), [193](#).
 " (Oxyopisthen) [118](#), [168](#),
 [169](#).
 " (Polypterus) [179](#).
 " (Sesarma) [1](#), [50](#).
 büttneri (Anoxyopisthen) [120](#).
 buquetii (Cyrtotrachelus) [148](#).
 " (Roelofsia) [148](#).
 Butorides [130](#).

C.

Cacomantis [123](#).
 Caladium [92](#).
 calamianensis (Sus) [86](#).
 Calandra [148](#), [149](#), [150](#), [154](#).
 Calandrinae [147](#).
 Calcinus [1](#), [58](#).
 caligana (Tagiades) [142](#).
 Callidryas [133](#), [141](#).
 Calloenas [129](#).

- Callolophus [123](#).
 Calornis [128](#).
 campbelli (Cercopithecus) [63](#).
 Campephagidae [125](#).
 Camponotus [131](#).
 canaliculatus (Cyclommatus) [235](#),
 [238](#).
 Canidia [156](#).
 capensis (Graphiurus) [66](#), [67](#), [68](#),
 [70](#), [71](#), [73](#).
 Capitonidae [123](#).
 Capra [221](#).
 caprata (Pratincola) [211](#).
 Caprimulgidae [125](#).
 Caprimulgus [125](#).
 Cardiophorus [245](#).
 Cardisoma [1](#), [18](#), [19](#).
 Caridagrus [124](#).
 Carpophaga [129](#).
 castaneus (Latirus) [158](#).
 Casyapa [133](#).
 Cathaemia [133](#), [141](#).
 Catharsius [131](#).
 catilla (Callidryas) [133](#).
 caudata (Helota) [226](#), [229](#).
 Cavia [109](#).
 cebifrons (Sus) [86](#).
 celatus (Otidognathus) [149](#).
 celebensis (Sus) [95](#), [96](#), [103](#).
 celeno (Lycaena) [139](#).
 centaurus (Amblypodia) [140](#).
 " (Narathura) [140](#).
 Centuriosus [86](#).
 ceramensis (Sus) [101](#).
 ceramica (Sus) [101](#).
 ceramicus (Dasychaerus) [101](#).
 Cercocobus [209](#).
 Cercophorus [154](#).
 Cercopithecus [63](#).
 cercopunctata (Helota) [197](#), [227](#),
 [229](#).
 Cervulus [207](#), [209](#).
 Cervus [101](#).
 Cetonia [196](#).
 Cetoniidae [181](#), [188](#).
 ceylonicus (Thaumastopeus) [185](#).
 Ceyx [124](#).
 chabrona (Ismene) [143](#).
 Chaerocampa [133](#).
 Chaetomys [108](#).
 Chalcoparia [126](#).
 Chalcophaps [129](#).
 Chalcosia [132](#), [143](#).
 Chalcostetha [126](#).
 chalybaea (Calornis) [128](#).
 Charadrius [215](#).
 Charaxes [133](#), [136](#).
 Chelonarium [249](#).
 chinensis (Engraulis) [176](#), [177](#), [178](#).
 " (Excalfactoria) [129](#).
 chloris (Sauropatis) [124](#).
 chloronota (Clinteria) [182](#), [184](#).
 chlorophthalmus (Gelasimus) [1](#), [22](#),
 [41](#), [42](#), [43](#), [44](#), [47](#).
 Choaspes [143](#).
 Chotorea [123](#).
 chromus (Ismene) [142](#).
 chryseis (Callidryas) [141](#).
 Chrysopelea [256](#).
 Ciconiidae [130](#).
 ciliata (Pseudosquilla) [60](#).
 cineraceus (Myoxus) [69](#).
 " (Orthotomus) [127](#).
 Cinnyris [215](#).
 Cirrhospila [188](#).
 Cisticola [128](#).
 citrinella (Zosterops) [214](#).
 clara (Hestia) [133](#).
 clavatum (Oxyopisthen) [169](#).
 Clerome [137](#).
 Clinteria [182](#), [183](#), [184](#).
 coarctatus (Corymbites) [247](#).
 " (Gelasimus) [1](#), [21](#), [25](#),
 [31](#), [32](#), [61](#).
 coccinea (Eletteria) [90](#).
 Coenochilus [187](#).
 coerulea (Clinteria) [183](#), [184](#).
 coeruleus (Megasclex) [83](#).
 Coleoptera [131](#).
 Collocalia [125](#), [210](#).
 Colocasia [92](#).
 colossus (Calandra) [150](#).
 " (Protocerus) [150](#).
 Columbidae [129](#).
 commersonianus (Engraulis) [176](#),
 [177](#), [178](#).
 comptus (Otidognathus) [149](#).
 conchyvorus (Sus) [86](#).
 concretus (Caprimulgus) [125](#).
 " (Caridagrus) [124](#).
 confinis (Clinteria) [183](#).
 conigicus (Lanistes) [111](#).
 contempta (Ismene) [143](#).
 Copsychus [128](#).
 Coquerelia [196](#).
 Coraciidae [124](#).
 corrosus (Epixanthus) [1](#), [13](#), [14](#),
 [15](#), [16](#), [17](#).
 Corvus [212](#).
 Corymbites [247](#).
 Coryphocera [182](#).
 coryta (Ergolis) [136](#).

coryta (Papilio) [136](#).
 costata (Helota) [228](#), [229](#).
 costeri (Neopharsalia) [190](#).
 costiflexalis (Lomotropa) [239](#).
 coupei (Myoxus) [73](#).
 cramerii (Euploea) [134](#).
 crassicaudatus (Eliomys) [67](#), [70](#), [71](#).
 crassimanus (Heterograpsus) [55](#), [56](#).
 crassum (Sarmatium) [51](#).
 crenulatus (Heterograpsus) [1](#), [53](#),
 [54](#), [55](#), [56](#).
 crepuscularis (Nyctipao) [143](#).
 Criniger [127](#).
 cristata (Parra) [216](#).
 crocale (Callidryas) [133](#).
 crocea (Danaïs) [134](#).
 crocopterata (Urapteryx) [144](#).
 crucifera (Anthracophora) [187](#).
 Cuculidae [123](#).
 cucullata (Pitta) [127](#).
 culta (Helota) [228](#), [229](#).
 cultrimanus (Gelasimus) [24](#).
 cuprifer (Orectogyrus) [192](#), [193](#).
 Curculio [148](#), [149](#).
 Curculionidae [154](#).
 cursitans (Cisticola) [128](#).
 curvipes (Helota) [227](#), [229](#).
 cuvieri (Ommatolampus) [116](#).
 cyanea (Irena) [126](#).
 Cyanoderma [127](#).
 cyanoptera (Coryphocera) [182](#).
 Cyclommatus [233](#), [235](#), [238](#).
 cyclurus (Simotes) [256](#).
 Cyliodrophis [256](#).
 Cyllo [135](#).
 Cymborhynchus [125](#).
 cynamolgos (Cercocoebus) [209](#).
 Cynonycteris [203](#).
 Cynopterus [202](#).
 Cynthia [138](#).
 Cypselidae [125](#).
 Cyrestis [136](#).
 Cyrtotrachelus [147](#), [148](#), [149](#).

D.

dactylinus (Dactylomys) [105](#), [108](#),
 [109](#), [110](#).
 dactylinus (Echimys) [105](#).
 Dactylomys [105](#), [106](#), [107](#), [110](#).
 dama (Hypsa) [143](#).
 danae (Actaea) [13](#).
 Danaïs [134](#).
 Dasychocerus [86](#), [101](#).
 davidis (Cyrtotrachelus) [149](#).
 " (Otidognathus) [149](#).

davisonii (Hydrophobus) [256](#).
 decemstriatus (Otidognathus) [149](#).
 decorata (Euthalia) [137](#).
 decoratus (Adolias) [137](#).
 dejone (Cynthia) [138](#).
 demeryi (Orectogyrus) [193](#).
 Dendrochelidon [125](#).
 dentatus (Epixanthus) [17](#).
 dentifrons (Sesarma) [52](#).
 deplanatum (Oxyopisthen) [116](#).
 Deudoryx [140](#).
 diabolicus (Sphex) [131](#).
 Diadema [137](#).
 diardi (Adolias) [131](#), [137](#).
 Dicacum [126](#), [215](#).
 dichrous (Cyrtotrachelus) [149](#).
 " (Roelofsia) [149](#).
 Dicotyles [85](#).
 dicurus (Sus) [86](#).
 difficilis (Helota) [228](#), [229](#).
 Digitibranchus [84](#).
 diniche (Mycalesis) [135](#).
 dirtea (Lexias) [133](#), [138](#).
 " (Symphaedra) [138](#).
 discedens (Lacon) [244](#).
 discors (Orectogyrus) [194](#).
 distinctus (Latirus) [158](#).
 docile (Nyctalemon) [133](#), [144](#).
 dohertyi (Helota) [227](#), [229](#).
 Dolichotis [109](#).
 domesticus (Sus) [86](#).
 domitia (Deudoryx) [140](#).
 dorimond (Amblypodia) [140](#).
 " (Papilio) [140](#).
 dorsale (Chelonarium) [249](#).
 doubledaii (Zeuxidia) [136](#).
 dryas (Myoxus) [69](#).
 Drymocataphus [127](#).
 Dryophis [256](#).
 dubia (Helota) [228](#), [229](#), [253](#).
 " (Penia) [246](#).
 dubius (Gelasimus) [33](#).
 duboulayi (Lomaptera) [188](#).
 dusara (Melanitis) [135](#).
 dussumieri (Gelasimus) [1](#), [20](#), [25](#),
 [26](#), [27](#), [31](#), [34](#), [35](#), [36](#), [37](#).
 duvaucelli (Pyrotrogon) [123](#).
 dux (Cyrtotrachelus) [148](#).
 " (Roelofsia) [148](#).
 Dynamis [116](#).
 Dysephicta [196](#).

E.

echeirus (Abisara) [138](#).
 Echimys [105](#), [110](#).

effrenus (Sus) 86.
 electra (Etisodes) 9, 10, 11.
 elegans (Calcinus) 59.
 " (Coryphocera) 182.
 " (Cyrtotrachelus) 149.
 " (Eugithopus) 145.
 " (Myoxus) 66, 67, 68, 71, 72, 73.
 " (Otidognathus) 149.
 " (Rhynchophorus) 154.
 Eletteria 90.
 Eliomys 66, 67.
 elongatus (Orectogyrus) 193.
 Elymnias 135.
 emarginatus (Aceraius) 131.
 Emballonura 209.
 Engraulinae 177.
 Engraulis 176.
 enhydri (Hypsirhina) 256.
 Epixanthus 1, 13, 14, 17, 61.
 eppi (Latirus) 158.
 Equula 91.
 Ergolis 135.
 erxlebenii (Cercopithecus) 63.
 erymanthis (Messaras) 138.
 erythrogaster (Cercopithecus) 63.
 erythropterum (Cyanoderma) 127.
 estella (Sithon) 139.
 Etisodes 1, 8, 9, 13, 61.
 Etisus 1, 2.
 Eugithopus 145, 146.
 Euhys 86.
 Eulacera 138.
 eumolpus (Amblypodia) 140.
 Euploea 133, 134.
 Eurybatus 238.
 Eurylaemidae 124.
 Eurylaemus 124.
 eurypylus (Papilio) 133.
 Eurystomus 124.
 Eurytrachelus 238.
 Euschema 144.
 eusemioïdes (Chalcusia) 143.
 Euthalia 137.
 evemon (Papilio) 133, 142.
 Excalfactoria 129.

F.

fairmairei (Helota) 224, 229.
 Falconidae 122.
 farquhari (Narathura) 140.
 feae (Helota) 197, 199, 223, 229.
 Felis 217, 219.
 fenisea (Hypopyra) 134.
 feralis (Lacon) 243.

fervidus (Protocerius) 150.
 flavomaculata (Cirrhopila) 188.
 " (Macronota) 188.
 " (Melinospila) 188.
 flavoviridis (Orthotomus) 128.
 floccosus (Cercophorus) 154.
 folus (Tagiades) 142.
 " (Udaspes) 142.
 forcipatus (Gelasimus) 1, 21, 31, 32, 61.
 forguesii (Titanus) 79.
 foveicollis (Polycetes) 160.
 franckii (Prothoe) 138.
 Fregata 130.
 frenatus (Sus) 86.
 frontalis (Epixanthus) 14, 15, 16, 17, 61.
 " (Etisodes) 1, 8, 9, 13, 61.
 fuciphaga (Collocalia) 125.
 fulgidissima (Coryphocera) 182.
 fulvicollis (Treron) 128.
 fulvitaris (Helota) 228, 229.
 fulviventris (Helota) 225, 230.
 fumosa (Tritonidea) 155.
 funebre (Oxyopisthen) 120.
 funerarium (Oxyopisthen) 120.
 fuscata (Munia) 215.
 fusco-albidus (Jyngipicus) 123.
 fuscum (Mycalasis) 135.
 Fusus 62, 157.

G.

gaimardi (Gelasimus) 1, 22, 39, 41, 42, 43.
 galgulus (Loriculus) 123.
 gallinacea (Parra) 216.
 gana (Tagiades) 142.
 Gelasimus 1, 20, 61.
 gemmata (Helota) 225, 230.
 geoffroyi (Charadrius) 215.
 Geoscolex 79.
 germani (Sesarma) 1, 51.
 germari (Ommatolampus) 116.
 " (Rhynchophorus) 116.
 gestroi (Helota) 227, 230.
 gigas (Anteus) 77, 79, 80, 82, 84.
 " (Camponotus) 131.
 " (Mygimnia) 131.
 glaga (Saccharum) 90.
 Glareola 129.
 Glareolidae 129.
 Glis 66.
 glis (Myoxus) 66, 67, 68, 69, 70, 72, 73, 74.
 glutinosus (Ichthyophis) 256.

Glycyphana [181](#), [186](#).
 Gnorimidia [188](#).
 gorhami (Helota) [226](#), [230](#).
 Gouridae [129](#).
 gracilipes (Metopograpsus) [1](#), [49](#), [61](#).
 gracilis (Odontolabis) [238](#).
 Gracula [128](#).
 gramineus (Bothrops) [256](#).
 " (Cardiophorus) [245](#).
 grandis (Protocerius) [150](#).
 Graphiurus [66](#).
 Grapsus [1](#), [49](#).
 griseus (Acridotheres) [122](#).
 guanhumi (Cardisoma) [18](#).
 guerinii (Helota) [226](#), [230](#).
 guineensis (Helota) [228](#), [230](#).
 gularis (Mixornis) [127](#).

H.

haemorrhoea (Cathaemia) [133](#), [141](#).
 Haliastur [122](#).
 halyi (Macronota) [186](#).
 Haplorhynchus [120](#), [167](#), [168](#), [172](#),
[173](#).
 hardwickii (Kerivoula) [205](#), [206](#).
 Hasora [143](#).
 hasseltii (Nectarophila) [126](#).
 Hazis [144](#).
 hecabe (Terias) [141](#).
 hegesippus (Danaïs) [134](#).
 " (Papilio) [134](#).
 helenia (Canidia) [156](#).
 helenus (Papilio) [142](#).
 Helota [197](#), [199](#), [223](#), [229](#), [251](#).
 Hemigrapsus [58](#).
 Herodias [129](#).
 herveyi (Macrocheirus) [148](#).
 hesione (Mycalopsis) [135](#).
 Hesperia [142](#).
 Hestia [133](#).
 Heterograpsus [1](#), [53](#), [56](#), [57](#), [61](#).
 hiemalis (Myrina) [139](#).
 Hirundinidae [125](#).
 Hirundo [125](#).
 hispida (Loncheres) [110](#).
 hoevenii (Trichomanis) [242](#).
 Homalopsis [256](#).
 horsfieldii (Zeuxidia) [133](#).
 hueti (Graphiurus) [67](#).
 hyacinthina (Siphia) [212](#).
 Hydrophobus [256](#).
 hyela (Hesperia) [142](#).
 " (Pirdana) [142](#).
 Hyloterpe [126](#).
 Hymenoptera [131](#).

Hypopyra [134](#).
 Hypothymis [125](#).
 Hypsa [133](#), [143](#).
 Hypsirhina [256](#).

I.

Ichthyophis [256](#).
 icterocephala (Phyllornis) [126](#).
 ida (Precis) [138](#).
 igorota (Polycetes) [159](#), [160](#).
 immaculata (Helota) [228](#), [230](#).
 " (Lexias) [133](#), [138](#).
 Imperata [90](#).
 imperialis (Clinteria) [182](#).
 inaequalis (Odontolabis) [238](#).
 incerta (Clinteria) [182](#).
 incilis (Anochilia) [196](#).
 indica (Chalcophaps) [129](#).
 indicus (Oriolus) [128](#).
 indus (Haliastur) [122](#).
 inexpectatus (Eurybatus) [238](#).
 innominata (Ceyx) [124](#).
 inornata (Monarcha) [212](#).
 insignis (Chalcostetha) [126](#).
 " (Orychodes) [163](#).
 insularis (Taeniopygia) [215](#).
 intermedia (Herodias) [129](#).
 intermedius (Calcinus) [1](#), [58](#), [59](#).
 inversus (Gelasimus) [1](#), [21](#), [44](#), [45](#),
[46](#), [47](#), [61](#).
 Iraota [140](#).
 Irena [126](#).
 isabella (Glareola) [129](#).
 Ismene [142](#), [143](#).
 isware (Papilio) [142](#).

J.

jalaensis (Sus) [86](#).
 jalla (Sturnopastor) [122](#).
 jama (Adolias) [137](#).
 jambu (Ptilonopus) [128](#).
 jansoni (Otidognathus) [149](#).
 japonica (Atherina) [176](#), [177](#), [178](#).
 " (Engraulis) [176](#).
 japonicus (Engraulis) [176](#), [177](#), [178](#).
 " (Stolephorus) [177](#).
 javana (Nassa) [156](#), [157](#).
 javanensis (Gracula) [128](#).
 " (Ketupa) [122](#).
 javanica (Butorides) [130](#).
 " (Hirundo) [125](#).
 " (Leucocerca) [125](#).
 " (Panesthia) [131](#).
 " (Tupaja) [209](#).

javanicus (Eurylaemus) [124](#).
 " (Leptoptilos) [130](#).
 " (Tragulus) [208](#).
 Jole [127](#).
 Jora [126](#).
 juliana (Unio) [114](#).
 Junonia [138](#).
 justina (Mycalesis) [135](#).
 " (Papilio) [135](#).
 juvena (Danaïs) [134](#).
 " (Radena) [134](#).
 Jyngipicus [123](#).

K.

kanchil (Tragulus) [208](#), [209](#).
 Kannabateomys [105](#), [109](#).
 kausamba (Abisara) [139](#).
 kelleni (Eliomys) [67](#), [68](#), [70](#), [74](#).
 Kerivoula [202](#), [204](#).
 Ketupa [122](#).
 Kittacincla [128](#).
 klugius (Thaumantis) [136](#).
 koenigii (Imperata) [90](#).
 kolbei (Helota) [225](#), [230](#), [251](#).
 korros (Zamenis) [256](#).
 kresna (Limenitis) [136](#).

L.

Lachnosterna [131](#).
 Lacon [243](#).
 lacteus (Gelasimus) [22](#), [40](#), [41](#), [43](#),
[44](#), [45](#), [46](#).
 laetus (Protocerius) [150](#).
 laevigata (Helota) [227](#), [230](#).
 Lagidium [109](#).
 Lagostomus [109](#).
 lais (Elymnias) [135](#).
 Lalage [212](#).
 Lampides [139](#).
 Lamprophorus [238](#).
 landanensis (Unio) [113](#).
 Laniidae [126](#).
 Lanistes [111](#).
 laomedia (Junonia) [138](#).
 lar (Calandra) [149](#).
 " (Cyrtotrachelus) [149](#).
 lasiotis (Myoxus) [72](#).
 Lasiuromys [110](#).
 latens (Calcinus) [59](#).
 Latirus [158](#).
 latreillii (Gelasimus) [40](#), [41](#), [42](#), [44](#).
 Lebadea [137](#).
 leda (Cyllo) [135](#).
 lempiji (Scops) [122](#).

Lepidiota [131](#).
 Lepidoptera [131](#).
 leptocephalus (Trimeresurus) [256](#).
 Leptoptilos [130](#).
 Lepus [217](#), [218](#).
 lerotina (Bifa) [67](#).
 leroyi (Orectogyrus) [191](#).
 leschenaulti (Charadrius) [215](#).
 leucocephala (Palargopsis) [124](#).
 Leucocerca [125](#).
 leucocyma (Elymnias) [135](#).
 leucogaster (Artamus) [212](#).
 leuconoë (Hestia) [133](#).
 leucorhynchus (Artamus) [125](#).
 leucothoë (Neptis) [136](#).
 " (Papilio) [136](#).
 Lexias [133](#), [138](#).
 limbata (Ptilotis) [214](#).
 Limenitis [136](#), [138](#).
 linearis (Stenophida) [120](#).
 lineolatus (Orychodes) [163](#).
 linnaei (Trepichrois) [134](#).
 Liomera [4](#).
 lisias (Sithon) [139](#).
 litigiosus (Lacon) [243](#).
 Litorhynchus [149](#).
 Logania [139](#).
 Lomaptera [188](#).
 Lomotropa [239](#).
 Loncheres [110](#).
 longicauda (Palaeornis) [122](#).
 longimanus (Curculio) [149](#).
 " (Cyrtotrachelus) [149](#).
 longipennis (Dendrochelidon) [125](#).
 longipes (Calandra) [148](#).
 " (Curculio) [148](#), [149](#).
 " (Cyrtotrachelus) [149](#).
 " (Helota) [224](#), [231](#).
 longirostra (Arachnothera) [126](#).
 longirostris (Sus) [94](#).
 Loriculus [123](#).
 luctuosa (Oreicola) [211](#).
 Ludius [246](#).
 Lumbricus [83](#), [84](#).
 lusitanica (Eliomys) [72](#).
 Lycæna [139](#).
 lycænaria (Amblypodia) [141](#).
 Lycænesthes [139](#).

M.

mackloti (Dicaeum) [215](#).
 Macrocheirus [147](#), [148](#).
 Macroglossa [143](#).
 Macronota [186](#), [188](#).
 Macronus [127](#).

- Macropterus [154](#).
 macrorhynchus (Corvus) [212](#).
 " (Cymborhynchus) [125](#).
 macroura (Kittacincla) [128](#).
 maculata (Protaetia) [187](#).
 maculatus (Grapsus) [1](#), [49](#).
 " (Heterograpsus) [55](#), [56](#).
 " (Prionochilus) [126](#).
 maitlandi (Cyclommatus) [238](#).
 malaccensis (Anthreptes) [126](#).
 " (Brachypteryx) [127](#).
 " (Callolophus) [123](#).
 malayana (Choaspes) [143](#).
 " (Ismene) [143](#).
 malayensis (Onychaëtus) [122](#).
 Manis [242](#).
 marginata (Lomaptera) [188](#).
 marginatus (Cynopterus) [202](#), [203](#),
 [204](#).
 marginatus (Megapenthes) [245](#).
 " (Protocerius) [150](#).
 mariae (Miolispa) [165](#).
 martha (Lebadea) [137](#).
 maurus (Semnopithecus) [209](#).
 maximus (Geoscolex) [79](#).
 medius (Anthus) [210](#).
 medus (Mycalesis) [135](#).
 megalotis (Felis) [217](#), [219](#), [220](#).
 Megascolex [83](#).
 Megapenthes [244](#), [245](#).
 megaspilota (Clinteria) [183](#).
 Meiglyptes [123](#).
 melanippus (Danaïs) [134](#).
 Melanitis [135](#).
 melanocephalus (Brachypodius) [127](#).
 melanoleuca (Oreicola) [211](#).
 melanopterus (Sturnopastor) [122](#).
 melanurus (Eliomys) [66](#), [67](#), [68](#), [72](#).
 Melinospila [188](#).
 mellii (Helota) [231](#).
 Melliphagidae [126](#).
 memnon (Papilio) [142](#).
 menetriesii (Euploea) [133](#).
 meninting (Alcedo) [124](#).
 Meropidae [124](#).
 Merops [124](#), [210](#).
 Messaras [138](#).
 messor (Metopograpsus) [1](#), [49](#), [61](#).
 metachloros (Chalcusia) [143](#).
 metamuta (Amblypodia) [140](#).
 Metopograpsus, [1](#), [49](#), [61](#).
 Microchaeta [77](#), [78](#), [81](#), [82](#).
 Micropternus [123](#).
 microtis (Sus) [86](#).
 midamus (Euploea) [134](#).
 mindanensis (Copsychus) [128](#).
 mineus (Mycalesis) [135](#).
 minuta (Felis) [219](#).
 minutus (Sus) [86](#).
 Miolispa [165](#).
 Mixornis [127](#).
 molossus (Catharsius) [131](#).
 " (Protocerius) [150](#).
 moluccensis (Cervus) [101](#).
 mona (Cercopithecus) [63](#).
 Monarcha [212](#).
 moricei (Anthracalaus) [244](#).
 mülleri (Zosterops) [215](#).
 mulciber (Euploea) [134](#).
 " (Papilio) [134](#).
 mumbyanus (Eliomys) [73](#).
 Munia [215](#).
 muntjac (Cervulus) [207](#), [209](#).
 muricola (Vespertilio) [209](#).
 murinus (Eliomys) [67](#), [68](#), [69](#), [70](#),
 [71](#), [72](#), [73](#).
 murinus (Myoxus) [67](#).
 Muscardinus [66](#).
 mutabilis (Nassa) [157](#).
 Mutilla [131](#).
 Mycalesis [135](#).
 mycterizans (Dryophis) [256](#).
 Mygimnia [131](#).
 Myiolestes [126](#).
 Myoxidae [65](#).
 Myoxina [66](#).
 Myoxus [66](#), [67](#).
 Myrina [132](#), [139](#).
 myrmidon (Cyrtotrachelus) [149](#).
 " (Otidognathus) [149](#).
 Myzomela [214](#).

N.

- nagtglasii (Eliomys) [67](#), [68](#), [70](#),
 [71](#), [73](#).
 Naja [256](#).
 napu (Tragulus) [208](#), [209](#).
 narada (Amblypodia) [141](#).
 Narathura [140](#).
 nasica (Treron) [128](#).
 Nassa [156](#).
 nathalia (Pieris) [141](#).
 " (Saletara) [141](#).
 " (Tachyris) [141](#).
 nebulosa (Thinopteryx) [144](#).
 Nectariniidae [126](#).
 Nectarophila [126](#).
 nefte (Athyma) [136](#).
 " (Limenitis) [136](#).
 neglectus (Tropidorhynchus) [213](#).
 Neocheritra [139](#).

Neopharsalia [189](#).
 nepalensis (Lamprophorus) [238](#).
 Neptis [136](#).
 netscheri (Lepus) [217](#), [218](#), [219](#).
 nicobarica (Calloenas) [129](#).
 niger (Sus) [100](#), [101](#), [102](#), [103](#), [104](#).
 nigrescens (Elymnias) [135](#).
 nigricans (Acherus) [174](#).
 nigricapitatus (*Drymocapthus*) [127](#).
 nigrita (Agestrata) [185](#).
 nigropictus (Otidognathus) [149](#).
 nilotica (Alma) [84](#).
 niloticus (Digitibranchus) [84](#).
 Niphanda [139](#).
 nitedula (Eliomys) [66](#).
 " (Myoxus) [66](#)—[74](#).
 nitidum (Oxyopisthen) [168](#).
 nitidus (Calcinus) [59](#).
 nivea (Myrina) [133](#), [139](#).
 " (Sithon) [139](#).
 nivifera (Athyma) [136](#).
 Noëmia [238](#).
 notata (Helota) [228](#), [231](#), [251](#).
 notatus (Sciurus) [209](#).
 nubila (Birnara) [143](#).
 nudus (Heterograpsus) [55](#), [56](#).
 Numenius [129](#).
 Nyctalemon [133](#), [144](#).
 Nyctipao [143](#).

O.

oberthūri (Helota) [224](#), [231](#).
 obscuriceps (Cyrtotrachelus) [149](#).
 obscurus (Myiolestes) [126](#).
 oceanica (Sesarma) [1](#), [52](#), [53](#).
 ocellata (Helota) [227](#), [230](#).
 ochromelas (Eurylaemus) [124](#).
 octogesima (Adolias) [137](#).
 oculata (Pseudosquilla) [1](#), [59](#), [60](#).
 " (Squilla) [59](#).
 Odontolabis [238](#).
 Oliva [157](#).
 olivacea (Jole) [127](#).
 Ommatolampus [115](#), [116](#).
 Omotemnus [153](#).
 Onychaëtus [122](#).
 Ophidia [256](#).
 Orectogyrus [191](#)—[194](#).
 oregonensis (Heterograpsus) [57](#).
 Oreicola [211](#).
 orientalis (Eurystomus) [124](#).
 Oriolidæ [128](#).
 Oriolus [128](#).
 ornata (Chrysopelea) [256](#).
 ornatus (Merops) [210](#).

orobinus (Eliomys) [66](#), [67](#).
 orphea (Pachycephala) [212](#).
 Orthoptera [131](#).
 Orthotomus [127](#).
 Orychodes [161](#), [163](#), [165](#).
 osias (Lycaena) [139](#).
 osteria (Apatura) [138](#).
 " (Eulacera) [138](#).
 Otidognathus [148](#), [149](#).
 Oxyopisthen [116](#), [118](#), [119](#), [120](#),
 167—170, [175](#).
 Ozius [16](#), [17](#).

P.

Pachycephala [212](#).
 Pachysoma [202](#).
 Padenia [143](#).
 paduka (Limenitis) [138](#).
 Palaeornis [122](#).
 pammon (Papilio) [141](#).
 panda (Pieris) [141](#).
 " (Tachyris) [141](#).
 Pandita [136](#).
 pandocus (Yphthima) [135](#).
 Panesthia [131](#).
 panthera (Elymnias) [135](#).
 Papilio [131](#), [133](#), [134](#), [135](#), [136](#),
 140, [141](#), [142](#).
 papuensis (Sus) [88](#), [97](#), [98](#), [101](#),
 102, [103](#), [104](#).
 Paratasis [154](#).
 Parra [216](#).
 pasteurii (Anthracalaus) [244](#).
 " (Cyclommatus) [233](#), [238](#).
 " (Thermonotus) [238](#).
 patroclus (Nyctalemon) [133](#), [144](#).
 pectoralis (Cinnyris) [215](#).
 " (Setaria) [127](#).
 Pelargopsis [124](#).
 Pelecanidae [130](#).
 pellucida (Kerivoula) [202](#), [204](#), [205](#),
 206.
 pellucidus (Vespertilio) [205](#).
 Penia [246](#).
 penicillatus (Heterograpsus) [53](#), [54](#),
 55, [56](#).
 percussus (Prionochilus) [126](#).
 Perdicidae [129](#).
 peregrina (Protaetia) [187](#).
 Pericrocotus [125](#).
 perspicillatus (Artamus) [212](#).
 Phacochoerus [85](#).
 phaeocephalus (Criniger) [127](#).
 phaeopus (Numenius) [129](#).
 phidippus (Amathusia) [136](#).

Philemon [213](#).
 philomela (Euploea) [134](#).
 Phyllornis [126](#).
 Picidae [123](#).
 picta (Nassa) [157](#).
 pictus (Myoxus) [71](#).
 " (Ommatolampus) [115](#).
 " (Orychodes) [163](#).
 Pieris [141](#).
 Piezorhynchus [212](#).
 Pirdana [142](#).
 piscator (Tropidonotus) [256](#).
 Pitta [127](#).
 Pittidae [127](#).
 planipennis(Prophthalmus)[161, 164](#).
 Ploceus [122](#).
 plumbipes (Areoturnus) [129](#).
 plumosus (Pycnonotus) [127](#).
 podicalis (Valgus) [187](#).
 pogonias (Cercopithecus) [63](#).
 polixena (Charaxes) [136](#).
 Polyetesis [159](#).
 Polypterus [179](#).
 polytes (Papilio) [141](#).
 pomona (Callidryas) [133](#).
 Pontodrilus [79](#).
 Porcula [85](#).
 porphyriaca (Naja) [256](#).
 Potamochoerus [85](#).
 Poteriophorus [145, 146](#).
 praetor (Macrocheirus) [148](#).
 praetoraria (Urapteryx) [144](#).
 Pratincola [211](#).
 Precis [138](#).
 prevostii (Sciurus) [207, 209](#).
 Prionochilus [126](#).
 procris (Acca) [136](#).
 Prophthalmus [161, 164](#).
 Protaetia [187](#).
 proteus (Tritonidea) [155](#).
 Prothoë [138](#).
 Protocerius [148, 150](#).
 pruinosis (Semnopithecus) [209](#).
 Pseudechis [256](#).
 Pseudoblabe [143](#).
 Pseudograpus [57](#).
 Pseudosquilla [1, 59](#).
 Psittacidae [122](#).
 Ptilonopus [128](#).
 ptilosus (Macronus) [127](#).
 Ptilotis [214](#).
 pubescens (Actaeodes) [1, 4, 7, 61](#).
 " (Liomera) [4](#).
 " (Zozymus) [4](#).
 pulasara (Adolias) [137](#).
 " (Tanaecia) [137](#).

pulla (Thaumastopeus) [186](#).
 pumila (Clinteria) [184](#).
 puncticollis (Miolipsa) [165](#).
 purpuratus (Protocerius) [150](#).
 pusilla (Helota) [228, 231](#).
 pusillus (Pycnonotus) [127](#).
 Pycnonotus [127](#).
 pyranthe (Callidryas) [141](#).
 Pyrotrogon [123](#).

Q.

quadrata (Cardisoma) [18](#).
 quadratum (Cardisoma) [1, 18](#).
 quadrimaculatus (Cyrtotrachelus)
 [149](#).
 quadrimaculatus(Otidognathus)[149](#).
 quadrivittata (Macronota) [186](#).
 quercinus (Eliomys) [66—73](#).
 quinticolor (Munia) [215](#).

R.

radamanthus (Euploea) [133](#).
 Radena [134](#).
 rahria (Cyrestis) [136](#).
 rappi (Microchaeta) [77, 78, 82](#).
 rectifascia (Macroglossa) [143](#).
 regalis (Protaetia) [187](#).
 republicana (Anochilia) [196](#).
 " (Coquerelia) [196](#).
 reticulata (Ptilotis) [214](#).
 reticulatus (Ozius) [16, 17](#).
 rhinoceros (Buceros) [124](#).
 rhinoceros (Buceros) [124](#).
 Rhinodrilus [82](#).
 Rhinolophus [209](#).
 Rhipidura [212](#).
 rhois (Polyetesis) [159, 160](#).
 Rhopodytes [123](#).
 Rhynchophorus [116, 151, 154](#).
 richtersii (Actaeodes) [4, 5, 6, 7](#).
 ringens (Engraulis) [176, 177, 178](#).
 ritsemae (Orychodes) [161](#).
 Roelofsia [148](#).
 Rollulidae [129](#).
 Rollulus [129](#).
 rotundata (Helota) [227, 231](#).
 rotundicosta (Canidia) [156](#).
 roulroul (Rollulus) [129](#).
 rubiginus (Rhynchophorus) [154](#).
 rubiginosus (Rhynchophorus) [154](#).
 rubiceps (Otidognathus) [149](#).
 ruficeps (Orthotomus) [127](#).
 rufipennis (Clinteria) [183](#).
 rufiventris (Rhipidura) [212](#).

rufofemoratum (Oxyopisthen) [167](#),
[169](#).
 rufopectinipes (Cyrtotrachelus) [149](#).
 rufopunctata (Actaea) [2](#), [3](#).
 rufulus (Anthus) [210](#).
 rufus (Cylindrophis) [256](#).
 rugata (Actaea) [1](#), [2](#), [3](#).
 " (Aegle) [1](#).
 rugosus (Epixanthus) [14](#).
 rugulosus (Ozius) [17](#).
 rüppellii (Actaea) [3](#).

S.

Saccharum [90](#).
 Saletara [141](#).
 salvania (Porcula) [85](#).
 sancta (Sauropatis) [124](#).
 sanguineus (Heterograpsus) [56](#), [57](#).
 santeng (Anoa) [217](#), [220](#), [221](#).
 Sarmatium [51](#).
 sarpedon (Papilio) [142](#).
 Sasia [123](#).
 saturata (Amblypodia) [133](#), [140](#).
 Sauropatis [124](#).
 Saxicolidae [128](#).
 scalaris ¹⁾ (Oxyopisthen) [167](#).
 Schizorrhina [196](#).
 Schizorrhinidae [196](#).
 schreiberi (Charaxes) [133](#).
 scintillans (Helota) [223](#), [231](#).
 Sciuropterus [209](#).
 Sciurus [66](#), [207](#), [209](#).
 Scolopacidae [129](#).
 Scops [122](#).
 Scrofa [86](#).
 scrofa (Sus) [85](#), [88](#).
 sculpticollis (Macronota) [186](#).
 sculptilis (Etisodes) [9](#).
 semicaudata (Emballonura) [209](#).
 semifulva (Helota) [228](#), [231](#).
 seminalis (Cardiophorus) [245](#).
 semmelinki (Oliva) [157](#).
 Semnopithecus [209](#).
 senegalus (Polypterus) [179](#).
 sepulchralis (Cacomantis) [123](#).
 sericeus (Megapenthes) [245](#).
 serratipennis (Helota) [227](#), [231](#).
 serrirostris (Rynchophorus) [152](#),
[153](#).
 servillei (Helota) [224](#), [231](#).
 Sesarma [1](#), [50](#), [51](#), [52](#), [53](#).
 Setaria [127](#).

sexmaculatus (Megapenthes) [244](#).
 sexualis (Orectogyrus) [191](#).
 sieboldi (Fusus) [62](#), [157](#).
 signatus (Gelasimus) [1](#), [21](#), [25](#), [35](#),
[36](#), [37](#), [38](#), [61](#).
 silvandra (Hypsa) [133](#).
 similis (Danaïs) [134](#).
 Simotes [256](#).
 sinensis (Helota) [226](#), [231](#).
 singalensis (Chalcoparia) [126](#).
 singapura (Amblypodia) [140](#).
 sinope (Pandita) [136](#).
 siparaja (Aethopyga) [126](#).
 Siphia [212](#).
 Sithon [139](#).
 solaris (Cinnyris) [215](#).
 sonneratii (Phyllornis) [126](#).
 soricinus (Sciurus) [209](#).
 spectabilis (Macrocheirus) [147](#), [148](#).
 spectrum (Tarsius) [209](#).
 Spheg [131](#).
 Spilopelia [129](#).
 spinosus (Heterograpsus) [1](#), [56](#), [57](#),
[58](#), [61](#).
 Squilla [59](#).
 stanleyanus (Tragulus) [208](#).
 Stenophida [120](#).
 stigma (Ommatolampus) [116](#).
 Strigidae [122](#).
 Stolephorus [177](#).
 stomphax (Clerome) [137](#).
 Sturnidae [128](#).
 Sturnopastor [122](#).
 subcorrosus (Epixanthus) [1](#), [14](#), [15](#),
[16](#), [17](#), [61](#).
 subfasciatus (Otidognathus) [149](#).
 subminiatus (Tropidonotus) [256](#).
 subrepleta (Euschema) [144](#).
 subrubiginosa (Tritonidea) [155](#).
 subviolaceus (Allotinus) [139](#).
 suffusa (Chaerocampa) [133](#).
 sulphurea (Pieris) [141](#).
 sumatranus (Rhopodytes) [123](#).
 supercilia (Adolias) [137](#).
 " (Tanaecia) [137](#).
 Sus [85](#), [86](#), [88](#), [89](#), [93](#), [94](#), [95](#), [96](#),
[97](#), [100](#).
 suturale (Oxyopisthen) [167](#) ²⁾, [170](#).
 suturalis (Miolipa) [166](#).
 swierstrae (Rynchophorus) [151](#),
[153](#).
 Sylviidae [127](#).
 Symphaedra [138](#).

1) Must be *suturale* (see p. [170](#)).

2) In stead of *scalaris* as is printed by mistake.

T.

Tachyris [141](#).
 taeniatus (Agonischius) [246](#).
 Taeniopygia [215](#).
 Tagiades [142](#).
 taininensis (Sus) [86](#).
 Tanaccia [137](#).
 taprobanicus (Coenochilus) [187](#).
 Tarsius [209](#).
 Terias [141](#).
 ternatensis (Sus) [104](#).
 Tersiphone [125](#).
 terrestris (Lumbricus) [83](#).
 tessellata (Lycaenesthes) [139](#).
 " (Niphanda) [139](#).
 tetragonon (Gelasimus) [1](#), [20](#), [24](#),
[26](#), [28](#), [29](#), [61](#).
 tetraspilatus (Ommatolampus) [116](#).
 tharis (Sithon) [139](#).
 Thaumantis [136](#).
 Thaumastopeus [185](#), [186](#).
 Thermonotus [238](#).
 theseus (Papilio) [141](#).
 thibetana (Helota) [226](#), [231](#).
 Thinopteryx [144](#).
 thoosa (Euploea) [133](#).
 thoracicus (Prionochilus) [126](#).
 thrax (Casyapa) [133](#).
 tomentosus (Actaeodes) [2](#).
 toyae (Gnorimidia) [188](#).
 tigrina (Spilopelia) [129](#).
 Timeliidae [127](#).
 timoleon (Deudoryx) [140](#).
 timoriensis (Lalage) [212](#).
 " (Philemon) [213](#).
 " (Sus) [95](#).
 " (Tropidorhynchus) [212—214](#).
 titan (Eurytrachelus) [238](#).
 Titanus [79](#).
 titthecheilum (Cynoterus) [203](#).
 Tragulus [207](#), [208](#), [209](#).
 transversa (Padenia) [143](#).
 Trepsichrois [134](#).
 Treron [128](#).
 Treronidae [128](#).
 triangularis (Gelasimus) [1](#), [22](#), [47](#), [61](#).
 Tricholepis [131](#).
 Trichomanis [242](#).
 trifolius (Rhinolophus) [209](#).
 trigonostigma (Dicaeum) [126](#).
 Trimeresurus [255](#), [256](#).
 Tritonidea [155](#).
 trivirgatus (Piezorhynchus) [212](#).
 Trogonidae [123](#).
 tropica (Vespa) [131](#).

Tropidonotus [256](#).
 Tropidorhynchus [210](#), [212](#), [213](#).
 tnkki (Meiglyptes) [123](#).
 Tupaja [209](#).
 typus (Dactylomys) [105](#), [106](#), [108](#).

U.

Udaspes [142](#).
 undosa (Tritonidea) [155](#).
 undulata (Tritonidea) [155](#), [157](#).
 unifasciatum (Chelonarium) [250](#).
 uniformis (Prothoë) [138](#).
 Unio [113](#), [114](#).
 Urapteryx [144](#).
 Urochaeta [83](#), [84](#).
 urvillei (Cardisoma) [19](#).
 " (Gelasimus) [1](#), [21](#), [25](#), [31](#),
[34](#), [35](#).
 ussuricus (Sus) [86](#).

V.

vagans (Neopharsalia) [189](#).
 valdai (Haplorhynchus) [120](#), [167](#),
[168](#), [172](#), [174](#).
 Valgus [187](#).
 vandepolli (Helota) [197](#), [199](#), [223](#),
[231](#).
 variabilis (Gelasimus) [1](#), [47](#), [48](#), [61](#).
 variatus (Gelasimus) [24](#).
 vellerialis (Lomotropa) [239](#).
 ventralis (Helota) [251](#).
 verloreinii (Macropterus) [154](#).
 vernans (Treron) [128](#).
 verrucosus (Dasypoerus) [101](#).
 " (Sus) [93](#), [101](#).
 versicolor (Chotorea) [123](#).
 " (Glycyphana) [181](#), [186](#).
 Vespa [131](#).
 Vespertilio [205](#), [209](#).
 Vesperugo [209](#).
 vestita (Tricholepis) [131](#).
 vigorsii (Helota) [197](#), [223](#), [224](#),
[232](#).
 villosum (Chelonarium) [250](#).
 villosus (Lasiuromys) [110](#).
 viridissima (Jora) [126](#).
 vitta (Hasora) [143](#).
 " (Ismene) [143](#).
 vittatum (Oxyopisthen) [119](#).
 vittatus (Poteriophorus) [145](#), [146](#).
 " (Sus) [89](#), [91](#), [93](#), [95](#).
 vocans (Gelasimus) [1](#), [20](#), [23](#), [24](#),
[25](#), [28](#), [29](#), [33](#), [61](#).
 vordermani (Adolias) [137](#).

vordermani (Tanaecia) [137](#)
 vordermanni (Sciuropterus) [209](#)
 " (Vesperugo) [209](#)
 vulgaris (Danaïs) [134](#)
 vulnerata (Myzomela) [214](#)

W.

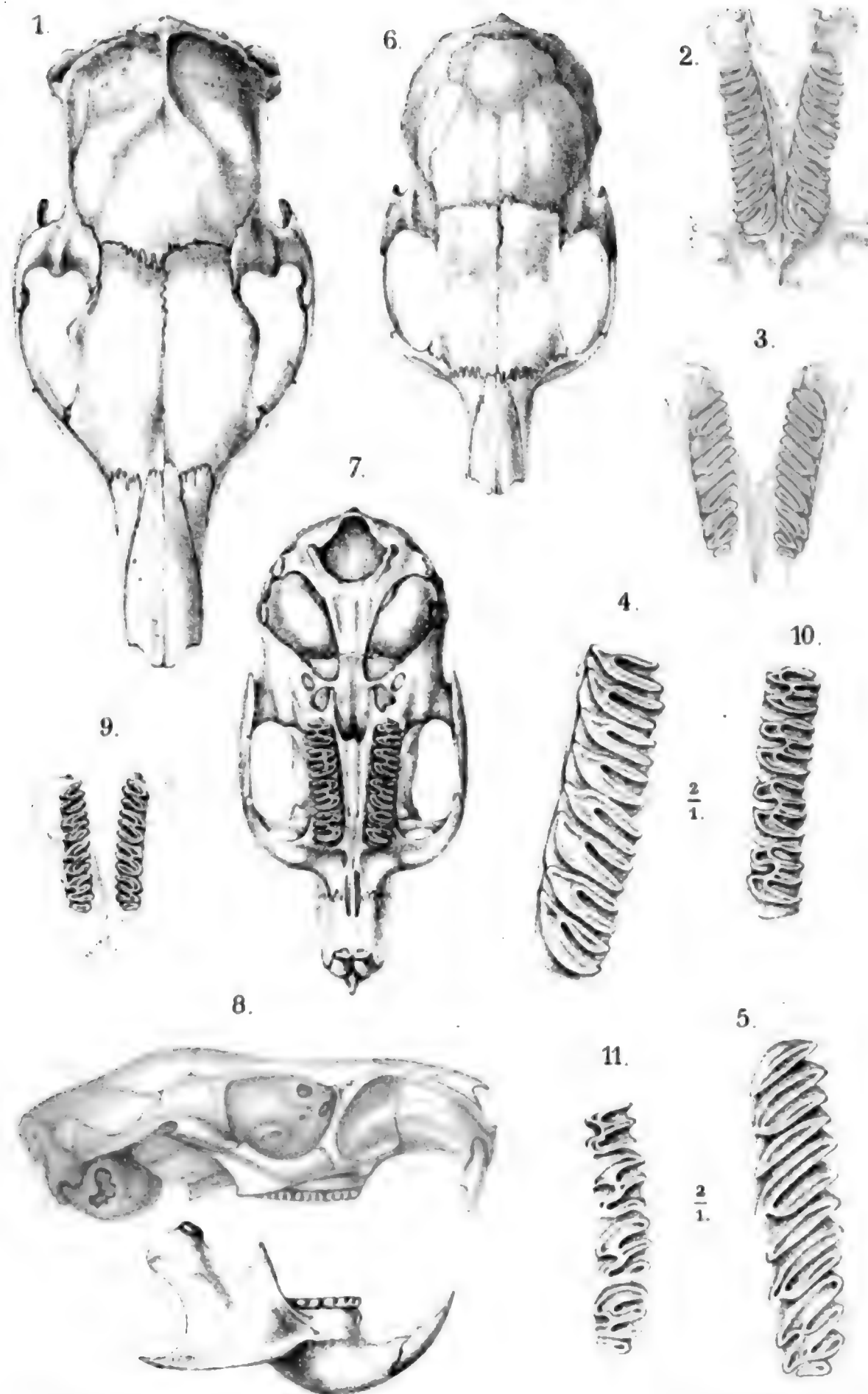
westermanni (Anthracalaus) [244](#)
 " (Litorhynchus) [149](#)
 " (Oxyopisthen) [120](#)
 whitehousei (Protaetia) [187](#)
 wolff (Cercopithecus) [63](#), [64](#)

Y.

Yphthima [135](#)

Z.

Zamenis [256](#)
 Zeuxidia [133](#), [136](#)
 Zosterops [214](#), [215](#)
 Zozyms [4](#)



A. J. J. Wendel del. et lith.

P. W. M. Trap impr.

1— 5. *Dactylomys dactylinus* E. G. St. Hilaire.

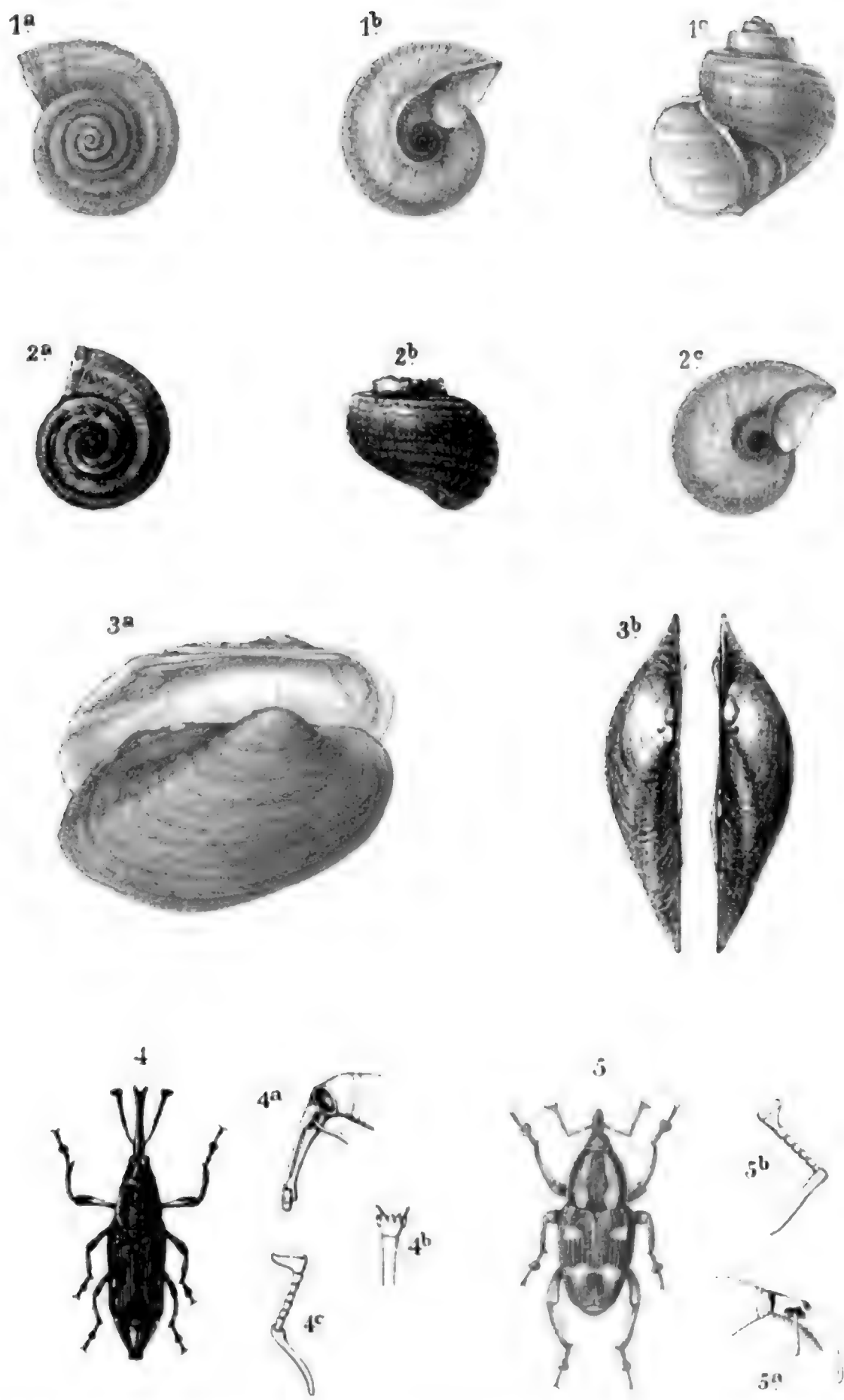
6—11. *Kannabateomys amblyonyx* Natterer.

2. Upper molar series.

3 and 9. Lower molar series.

4 and 10. Right upper molar series, enlarged.

5 and 11. Right lower molar series, enlarged.



1, 2, 3. A.J.J.Wendel | ad nat. del. A.J.J.Wendel lith. P.W.M.Trap impr.
4, 5. W. F. Jacobs

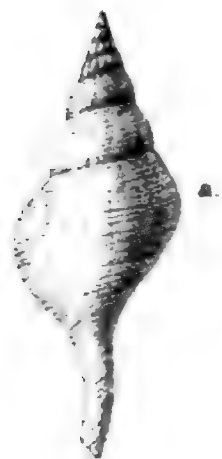
- 1, 2. *Lanistes conigicus* Boettg. var.
3. *Unio landanensis* Schepm.
4. *Ommatolampus pictus* Roel.
5. *Eugithopus elegans* Roel.



1.



2.



3.



4.
3
2.

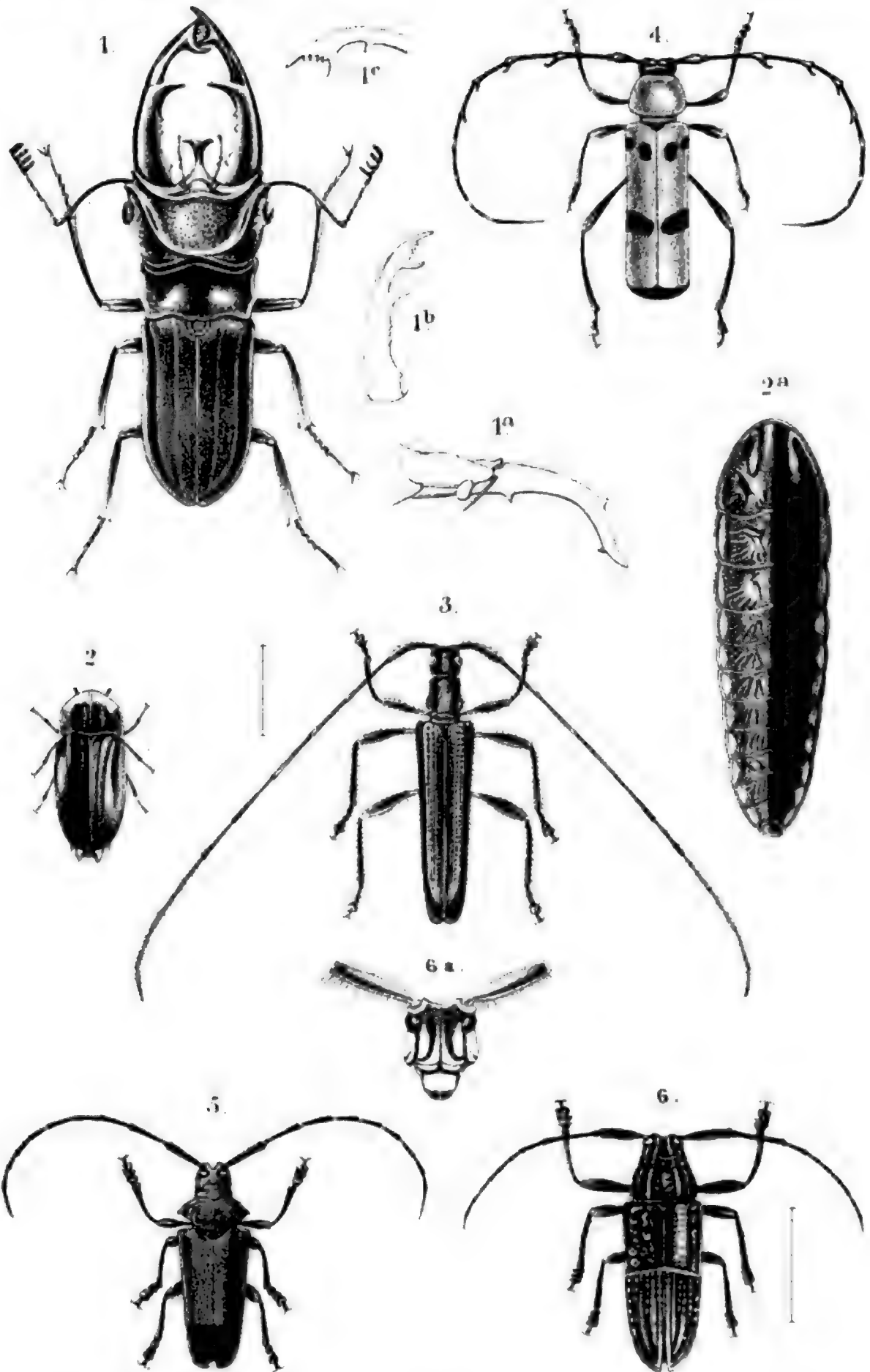


A.J.J. Wendel ad nat. del. et lith.

P.W.M. Trap impr.

- 1. Tritonidea undulata Schepm.
- 2. Nassa javana Schepm.

- 3. Fusus Sieboldi Schepm.
- 4. Oliva Semmelinki Schepm.



W. F. Jacobs ad nat. del.

A. J. J. Wendel lith.

P. W. M. Trap impr.

1. *Cyclommatus Pasteuri* Rits.
2. *Lamprophorus nepalensis* Gray.
3. *Noemia apicicornis* Rits.

4. *Eurybatus inexpectatus* Rits.
5. *Thermonotus Pasteuri* Rits.
6. *Atossa bipartita* Rits.

NOTES
FROM THE
LEYDEN MUSEUM.

NOTES
FROM THE
LEYDEN MUSEUM

FOUNDED BY THE LATE

Prof. H. SCHLEGEL,

CONTINUED BY

Dr. F. A. JENTINK,
Director of the Museum.

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**VOL. XIV.**  
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LEYDEN
E. J. BRILL.
1892.

CONTENTS OF VOL. XIV.

	Page
† Jan Pieter van Wickevoort Crommelin. By J. Büttikofer .	129

MAMMALIA.

On <i>Semuopithecus pyrrhus</i> Horsfield. By Dr F. A. Jentink (Plates 3 and 4).	119.
On <i>Pithechir melanurus</i> S. Müller. By Dr. F. A. Jentink (Plates 3 and 4) .	122

AVES.

The specimens of the genus <i>Tatara</i> in the Leyden Museum. By J. Büttikofer.	13.
On the specific value of Levaillant's Traquet Commandeur. By J. Büttikofer .	17.
On the collections of Birds, sent by the late A. T. Demery from the Solymah river (W. Africa). By J. Büttikofer.	19.
On a new species of <i>Batrachostomus</i> . By Ernst Hartert.	63.
On a chestnut and black weaver finch from Sumatra. By J. Büttikofer . .	132.
On a collection of Birds from the islands of Flores, Sumba and Rotti. By J. Büttikofer	193.
The Birds of Sumba. By A. B. Meyer	265.

PISCES.

On <i>Orthragoriscus nasus</i> Ranzani. By Dr. Th. W. van Lidth de Jeude (Plate 5).	127.
-------------------------------------------------------------------------------------	------

INSECTA.

COLEOPTERA.

Description of a new species of the Lucanoid genus <i>Cyclommatus</i> , and list of the described species. By C. Ritsema Cz.	1.
Description d'une espèce nouvelle du genre <i>Eugithopus</i> . Par W. Roelofs . .	7.
Trois Elatérides nouveaux. Décrits par E. Candèze.	9.
Description de deux <i>Hydrocoptus</i> (Dytiscidae) nouveaux. Par M. Régimbart .	11.
A new Lucanoid beetle from Java. Described by C. Ritsema Cz.	31.
Observations sur les espèces du genre <i>Oxyopisthen</i> et des genres voisins. Par W. Roelofs	33.
A new Longicorn beetle. Described by C. Ritsema Cz.	38
Descriptions de trois espèces nouvelles de Lycides de Bornéo. Par J. Bourgeois.	39.

	Page
Deux espèces nouvelles de Coléoptères de la famille des Nitidulidae. Décrites par A. Grouvelle	43.
<i>Cyclommatus squamosus</i> , a new species of Lucanid from Borneo. Described by C. Ritsema Cz.	45.
Description de deux nouvelles espèces du genre <i>Onychogymnus</i> Quedenfeldt. Par W. Roelofs.	49.
On two genera described by James Thomson in his <i>Systema Cerambycidarum</i> . By C. Ritsema Cz.	54.
On <i>Taeniodera quadrilineata</i> and some allied species By Oliver E. Janson .	55.
A new species of the Staphylinid genus <i>Trygaster</i> . Described by D. Sharp. .	61.
Observations sur les <i>Stenophida linearis</i> Pasc et <i>Oxyopisthen suturale</i> Roel. (<i>Stenophida</i> (?) <i>trilineata</i> Auriv.). Par W. Roelofs	133.
Description d'un nouveau genre et d'une nouvelle espèce de Curculionides de la tribu des Ulomascides. Par W. Roelofs.	136.
The species of Lucanoid Coleoptera hitherto known as inhabiting the island of Java. Enumerated by C. Ritsema Cz.	139.
Additions and corrections to the list of Sumatran Lucanidae. By C. Ritsema Cz.	143.
Contributions to the knowledge of the family Brentidae. By Dr. A. Senna. VIII.	161.
Trois espèces nouvelles d'Helmides des îles de la Sonde. Décrites par A. Grouvelle.	187.
<i>Prosopocoelus tarsalis</i> , a new Lucanid. Described by C. Ritsema Cz. . . .	191.
Deux nouveaux genres et deux nouvelles espèces du groupe des Rhynchophorides. Décrits par W. Roelofs	207.
Three new <u>species</u> of the Longicorn genus <i>Pachyteria</i> . Described by C. Ritsema Cz.	213.
Two new species of the Longicorn genus <i>Glenea</i> . Described by C. Ritsema Cz.	221.
Eine neue Calandriden-Art der Gattung <i>Paratasis</i> Chev. aus Java. Von Dr. K. M. Heller	269.

CRUSTACEA.

Carcinological studies in the Leyden Museum. By Dr. J. G. de Man. n°. 6. (Plates 7—10)	225.
--------------------------------------------------------------------------------------------------	------

MOLLUSCA.

Land- and freshwater Shells collected by Dr. H. ten Kate in Sumba, Timor and other East-Indian islands. Described by M. M. Schepman. (Plate 6) .	145.
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ECHINODERMATA.

Ueber die Arten und den Skelettbau von <i>Culcita</i> . Von Dr. Clemens Hartlaub. (Tafel 1 und 2).	65.
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Vol. XIV was issued in parts in the following order:

Nº. 1 and 2 — April 1892, Note I—XXII.

Nº. 3 and 4 — July 1892, Note XXIII—XXXVIII.

NOTE I.

DESCRIPTION OF A NEW SPECIES
OF THE LUCANOID GENUS CYCLOMMATUS, AND
LIST OF THE DESCRIBED SPECIES

BY

C. RITSEMA Cz.

Cyclommatus Frey-Gessneri, n. sp. ♂ ¹).

This species is allied to *Cyclommatus canaliculatus* Rits. from Nias (Notes Leyd. Mus. XIII, p. 235) on account of the presence of the notch on the outer upper margin of the mandibles at some distance from the tip. It differs from *canaliculatus* by the want of the distinct groove along the middle of the pronotum.

Length of the forma major 40 mm., breadth at the shoulders $8\frac{3}{4}$ mm. — Rather pale castaneous, head and thorax slightly darker than the elytra, with aeneous tints; the margins of the mandibles, of the thorax and of the elytra (the basal margin excepted) bronze black; the tarsi, the apical teeth of the mandibles and the scape of the antennae glossy black, the flagellum (with the exception of the three apical joints of the club) glossy brownish red; the upper side of the femora pale yellowish brown.

The insect is rather densely covered with whitish scales;

1) This species will perhaps prove to be the *Cyclommatus Dehaani* of Burmeister which is perfectly distinct from Westwood's *Dehaani* of which I have examined the type-specimen preserved in the late Melly's collection in the Natural History Museum at Geneva. The latter species is not notched on the outer upper margin of the mandibles at some distance from the tip.

these scales are roundish on the head and pronotum, narrow on the elytra.

The mandibles are as long as the distance between the front-margin of the head in front of the eyes and the base of the abdomen; their outer margin is regularly convex from the base to the apex, their inner margin armed at one 6th of their length with a strong tooth; the ante-apical tooth is not truncated, and between it and the tip of the mandible three teeth are present. On the apical third of the mandibles the outer upper margin rises slowly, but opposite the front-margin of the ante-apical tooth this raised margin ends suddenly so as to form here a small tooth-like projection. The mandibles are opaque and covered with scale-bearing punctures which disappear, however, towards the end where the mandibles are glossy.

The upper side of the head shows a large flattened depression, the margins of which are only raised in front of the eyes; the sculpture on the cheeks is slightly coarser than that on the disk. The front-margin of the head between the outer margin of the mandibles is broadly emarginate, the middle portion of the emargination nearly straight; at this margin the head sinks perpendicularly down towards the clypeus which is declivous and broadly truncate and has its front-margin faintly or more distinctly ¹⁾ bisinuate.

The sides of the prothorax are angular about the middle; the front-margin is accompanied laterally by an indistinct impression, and the surface is densely covered with a scale-bearing punctuation; a faintly impressed line runs along the middle of the pronotum.

The elytra are covered with a fine but very distinct scale-bearing punctuation, and each of them shows two indistinct costae.

The intercoxal part of the prosternum is conically projected. The fore-tibiae are unarmed and nearly straight.

Two male specimens of equal development and both from

1) This latter is the case in the male specimen of the Museum at Geneva.

Java. One of them belongs to the Leyden- the other to the Geneva Museum. The latter specimen has been communicated to me, together with the type of *Cyclommatus Dehaani* Westw., by the able Conservator of the named Museum, Mr. E. Frey-Gessner, and I have much pleasure in naming this new species after that gentleman.

LIST OF SPECIES ¹⁾.

- affinis* Parry. *Cat. Col. Lucan.* 1864,
p. 40; — id. 1870, p. 109; —
id. 1875, p. 12. Borneo, [Philippi-
(This is in my opinion a mere syno- nes ²⁾].
nym of *Dehaani* Westw.).
- canaliculatus* Rits. *Notes Leyd. Mus.*
XIII, 1891, p. 235. Nias.
- Dehaani* Westw. *Ann. a. Mag. Nat.*
Hist. VIII, 1842, p. 124 ³⁾. Borneo.
Westw. *Cab. Orient. Entom.*
1848, p. 21; pl. 10, f. 2
(sub *rangifer* Schönh.). ”
Thoms. *Ann. Soc. Ent. France*,
1862, p. 397. [Java].
- Parry. *Cat. Col. Lucan.* 1864,
p. 84; — id. 1870, p. 109;
— id. 1875, p. 12. ”
(I believe *affinis* Parry to belong to
this species).
- elaphus* Gestro. *Ann. Mus. Genova*,
XVI, 1881, p. 309, fig. Sumatra.

1) I have thought it of interest to indicate in this list the localities of the species like they are recorded by the various authors, much confusion existing in this regard. The incorrect localities are in brackets.

2) The specimen from the Philippines in the British Museum, alluded to by Major Parry, no doubt will prove to belong to *Cyclommatus Zuberi* Waterh.

3) Published in October 1841.

faunicolor Hope. <i>Proc. Ent. Soc.</i> 1844, p. 106.	? ¹⁾
Westw. <i>Trans. Ent. Soc. London</i> , IV, 1847, p. 273; pl. 20, f. 1.	Java?
Parry. <i>Cat. Col. Lucan.</i> 1864, p. 84.	"
Parry. <i>Cat. Col. Lucan.</i> 1870, p. 109; — id. 1875, p. 12.	Java, [Nias].
Frey-Gessneri Rits. <i>antedà</i> p. 1.	Java.
? <i>Dehaani</i> Burm. (<i>nec</i> Westwood), <i>Handb. d. Ent.</i> V, 1847, p. 375.	Borneo.
insignis Parry. <i>Proc. Ent. Soc.</i> 1862, p. 111; — id. <i>Cat. Col. Lucan.</i> 1864, p. 41.	Oriente.
Parry. <i>Cat. Col. Lucan.</i> 1864, p. 84.	Archipel or.?
Parry. <i>Cat. Col. Lucan.</i> 1870, p. 109, and 1875, p. 12.	Borneo.
Kaupl H. Deyr. <i>Ann. Soc. Ent. Belge</i> , IX, 1865, p. 30; pl. 2, f. 2.	[Celebes ²⁾].
Parry. <i>Cat. Col. Lucan.</i> 1870, pp. 59 and 109, and 1875, p. 12.	[Celebes, Batchian].
Gestro. <i>Ann. Mus. Genova</i> , XVI, 1881, p. 310, <i>fig.</i> (without synonym).	Nov. Guinea.
Maitlandi Parry. <i>Cat. Col. Lucan.</i> 1864, p. 40; pl. 12, f. 4.	Nias.
Parry. <i>Cat. Col. Lucan.</i> 1870, pp. 86 and 109.	Nias, [Java].
(I believe <i>Maitlandi</i> Parry to be specifically distinct from <i>faunicolor</i> Hope).	

1) I have not been able to compare the Proceedings of the year 1844.

2) This locality is given by mistake in stead of New Guinea (see: Gestro in *Ann. Mus. Genova*, XVI, 1881, p. 311).

- Margaritae** Gestro. *Ann. Mus. Genova*, IX, 1877, p. 324, fig.; — id. XVI, 1881, p. 310, fig. Fly river.
(*Margaritae* Gestro and *Kaupi* Deyr. are said to be distinct species).
- metallifer** Boisd. *Voy. Astrolabe. Fn. Ent.* 1835, p. 236; pl. 6, f. 20. Menado.
H. Deyr. *Ann. Soc. Ent. Belge*, IX, 1865, p. 30; pl. 2, f. 1. Celebes.
Parry. *Cat. Col. Lucan.* 1864, pp. 39 a. 84 (*aeneomicans* Parry). Batchian.
Parry. *Cat. Col. Lucan.* 1870, p. 109, and 1875, p. 12. Batchian, Celebes.
Gestro. *Ann. Mus. Genova*, XVI, 1881, p. 310. Menado.
- Mniszechi** Thoms. *Rev. Zool.* (2) VIII, 1856, p. 526. [Borneo].
Thoms. *Ann. Soc. Ent. France*, 1862, p. 397. Shanghai.
Parry. *Cat. Col. Lucan.* 1864, p. 84; — id. 1870, p. 109; — id. 1875, p. 12. China.
- Pasteuri** Rits. *Notes Leyd. Mus.* XIII, 1891, p. 233; pl. 10, f. 1. Sumatra.
- strigiceps** Westw. *Cab. Orient. Entom.* 1848, p. 18; pl. 8, f. 5. Himalaya.
var. *multidentatus* Westw. *l. c.* p. 17; pl. 8, f. 3. India or.
Parry. *Cat. Col. Lucan.* 1864, p. 84; — id. 1870, p. 109; — id. 1875, p. 12. " "
- tarandus** Thunb. *Mém. Moscou.* I, 1806, p. 190; pl. 12, f. 1. India or.
Burm. *Handb. d. Entom.* V, 1847, p. 374. India.
Thoms. *Ann. Soc. Ent. France*, 1862, pp. 397 and 421. Borneo.
- Notes from the Leyden Museum, Vol. XIV.

Parry. <i>Cat. Col. Lucan.</i> 1864,	
p. 84; — id. 1870, p. 109;	
— id. 1875, p. 12.	Borneo.
H. Deyr. <i>Pet. Nouv. Entom.</i>	
II, 1870, p. 87.	"
Gestro. <i>Ann. Mus. Genova</i> , XVI,	
1881, p. 309.	"
<i>rangifer</i> ¹⁾ Schönh. <i>Syn. Ins.</i> I, 3,	
1817, p. 322.	India or.
Zuberi Waterh. <i>Ent. Mo. Mag.</i> XII,	
1876, p. 173.	Mindoro.
Parry. <i>Cat. Col. Lucan.</i> 1875,	
p. 12.	"

Obs. The specimens from Palembang and Deli, recorded in my List of Sumatran Lucanidae (Notes Leyd. Mus. XI, p. 233) under the name of *Cyclommatus faunicolor* (Hope) Westw., do not belong to that species but to *Cyclommatus Dehaani* Westw.

As to the Lucanoid fauna of Nias, a recent consignment of Nias-beetles received from Mr. Pasteur, contained three species which were not yet recorded from that island, viz. *Metopodontus occipitalis* Hope, *Eurytrachelus purpurascens* Voll. and *Gnaphaloryx taurus* Fabr. (see also Notes Leyd. Mus. XIII, p. 238).

Leyden Museum, October 1891.

1) This name was proposed by Schönherr to substitute *tarandus* Thunb., the latter name having already been used by Swederus for a *Lucanus*. Both species, however, belong to distinct genera, viz. *Mesotopus* and *Cyclommatus*.

NOTE II.

DESCRIPTION D'UNE ESPÈCE NOUVELLE DU
GENRE EUGITHOPUS

PAR

W. ROELOFS.

Eugithopus nobilis, n. sp.

D'une forme ovale, couvert d'un enduit noirâtre sur le prothorax, brun-pourpre foncé sur les élytres, orné d'un dessin blanc-jaunâtre en dessus; dessous blanc-jaunâtre lavé de gris. — Long. 25 millim. (rostr. excl.).

Espèce offrant beaucoup d'analogie avec *E. elegans* mihi, par la forme et le mode de coloration, mais se distinguant surtout par la couleur du fond et la forme des taches.

Rostre de la longueur du prothorax, médiocrement arqué, épaissi à la base, avec un point assez profond entre les yeux et une ligne imprimée le parcourant jusqu'au bout. Un enduit blanc-jaunâtre qui le couvre, laisse le bout dénudé. L'espace entre les yeux et les scrobes est irrégulièrement et profondément ponctué. Les antennes sont couvertes du même enduit que le rostre. La tête est très finement ponctué.

Prothorax faiblement arrondi sur les côtés, garni d'un enduit noirâtre, vaguement couvert d'une ponctuation peu apparente, brune sur les parties noires du fond, sa base bordée d'une ligne étroite blanc-jaunâtre, quatre lignes un peu ondulées de la même couleur vont de la base au sommet, se rapprochant un peu en avant. Ecusson blanc-jaunâtre, un peu déprimé, en triangle, arrondi au bout.

Notes from the Leyden Museum, Vol. XIV.

Elytres ovales, moins rétrécies en arrière que chez *E. elegans*, faiblement calleuses vers l'extrémité, finement striées, vaguement ponctuées sur les taches claires. Elles sont couvertes d'un enduit velouté d'un pourpre très-foncé, la base des intervalles des stries est garnie d'un enduit blanc-jaunâtre sur l'espace d'environ deux millimètres, la strie à côté de l'écusson en est dépourvue, la couleur claire s'étend plus en arrière sur le 3^e intervalle, où elle se réunit avec celle du second intervalle, qui en est couvert à cette place et forme une ligne, d'abord droite puis se courbant, au delà du milieu des élytres vers leur bord. Une petite tache se voit enfin vers l'extrémité des élytres.

Le pygidium, d'un gris-jaunâtre, porte une ponctuation assez grosse et une carène médiane, garnie, comme l'extrémité de l'abdomen, de pilosité courte et brune.

Le dessous est d'un blanc-jaunâtre, lavé par place de gris, sa ponctuation fine est plus serrée sur les côtés et vers l'extrémité de l'abdomen. Les pattes ont la couleur du dessous; les jambes ont des côtes peu élevées et une double rangée de poils courts sur la tranche intérieure.

Un individu ♂ de Brunei, nord de Borneo, découvert par Mr. Waterstradt (collection Neervoort van de Poll).

La Haye, Novembre 1891.

NOTE III.

TROIS ELATÉRIDES NOUVEAUX

DÉCRITS PAR

E. CANDÈZE.*Campsosternus Pasteuri*, n. sp.

Nitidissimus, aureo-cupreus, glaber; antennis nigris, basi æneis; capite æneo, haud nitido; prothorace longitudine paulo latiore, æqualiter convexo, disperse et subtiliter punctulato, angulis posticis vix apice obtuse carinatis; elytris convexis, basi subsulcatis, disco disperse punctulatis et leviter striato-punctatis margine anguste viridi; subtus æneo-viridis, cupreo-micans; pedibus viridibus. — Long. 22 mill., lat. 8 mill.

Hab. Ile Nias.

Cette espèce, de taille moyenne pour le genre, a des rapports évidents avec plusieurs autres, notamment avec les *C. auratus*, *latiusculus* et *igneus*. Du premier, elle diffère avant tout par la taille et la ponctuation bien moins forte. C'est également par une ponctuation beaucoup plus fine et plus rare qu'elle diffère du *latiusculus*; enfin, ses angles prothoraciques postérieurs n'ont pas cette forte carène qui se remarque chez l'*igneus*. On le distinguera encore de tous les trois par les séries de points des élytres, qui manquent entièrement aux espèces auxquelles je la compare.

La teinte générale est d'un cuivreux doré très brillant, avec les élytres étroitement bordées de vert. Les pattes sont de teinte métallique, à l'exception des tarses qui sont noirs. Les téguments sont entièrement glabres.

Je dédie l'espèce à Mr. Pasteur, à qui le Musée de Leyde est redevable de l'exemplaire unique que j'ai vu.

Notes from the Leyden Museum, Vol. XIV.

Megapenthes litteratus, n. sp.

Ferrugineus, cinereo-pilosulus, nitidus; prothorace latitudine paulo longiore, a basi leviter angustato, punctato, nigro-trimaculato; elytris punctato-striatis, apice parum emarginatis, disco vitta nigra; subtus niger, pedibus infuscatis, tarsorum articulo quarto dilatato. — Long. 14 mill., lat. $3\frac{1}{4}$ mill.

Hab. Java oriental. (Musée de Leyde, et ma collection).

J'en ai vu un grand nombre d'exemplaires. Il a une tournure de *Simodactylus*, et la légère dilatation du quatrième article des tarses démontre que cette espèce a certaines tendances à se rapprocher de ces derniers, aussi bien, du reste, que des *Aeolus*, parmi lesquels il conviendrait de le ranger, si l'on ne considérait que la structure des tarses. Mais la construction des hanches et surtout de la tête m'engage à le classer dans les *Megapenthes*, à la suite de *M. marginatus*.

Les taches noires du prothorax consistent en trois lignes longitudinales parallèles souvent reliées en elles, au milieu du disque, par une ligne transversale.

Megapenthes remotus, n. sp.

Elongatus, brunneus, griseo sat dense breviter pilosus; antennis ferrugineis; prothorace latitudine sesqui longiore, subcylindrico, æqualiter punctato, angulis posticis divaricatis, bicarinatis; elytris a basi attenuatis, apice emarginatis, striis angustis fortiter punctatis; subtus plus minusve nigrescens; pedibus flavis. — Long. 14 mill., lat. $3\frac{1}{2}$ mill.

Hab. Célèbes. (Musée de Leyde, et ma collection).

Même remarque que pour le précédent en ce qui regarde la tendance à une dilatation des tarses, sans être toutefois aussi accentuée que chez les *Simodactylus*. C'est aussi une forme de transition. Il a des rapports de taille et de couleur avec les *M. junceus* et *inflatus*, des Philippines.

Glain-lez-Liége, Décembre 1891.

NOTE IV.

DESCRIPTION DE DEUX HYDROCOPTUS
(DYTISCIDAE) NOUVEAUX

PAR

M. RÉGIMBART.*Hydrocoptus opatrinus*, n. sp.

Long. $2\frac{1}{3}$, mill. — Oblongo-ovalis, minime attenuatus, convexus, rufus; supra subtilissime reticulatus, subopacus; capite et pronoto rufo-ferrugineis, in medio vage adumbratis, hoc ad latera antice arcuato et postice cum elytris continuo; elytris nigro-fuscis, fortiter reticulatis, subopacis, punctato-striatis, seriebus octo sat regularibus et punctis magnis sat approximatis formatis; pedibus antennisque rufis, his in medio leviter incrassatis.

Espèce extrêmement distincte par la sculpture des élytres et par son aspect qui rappelle assez bien celui de certains Opatrides, la forme étant assez largement oblongue, très arrondie aux deux bouts, avec son maximum de convexité vers la seconde moitié des élytres; la couleur est d'un roux ferrugineux, avec le milieu de la tête et du pronotum très vaguement et légèrement obscurcis; les élytres sont d'un brun noir foncé et subopaques à cause de la réticulation qui est très fine mais très imprimée; elles sont marquées de huit séries assez régulières de points gros, assez rapprochés et bien imprimés, ce qui leur donne presque l'aspect de sillons; les antennes sont légèrement épaissies au milieu.

Hab. Borneo occidental: Sambas (Dr. Bosscha). — Un seul exemplaire dans la collection du Musée de Leyde.

Notes from the Leyden Museum, Vol. XIV.

Hydrocoptus Bosschae, n. sp.

Long. 2 mill. — *Praecedenti simillimus*: minor, minus convexus, minus latus, colore paulo minus obscurus et paulo magis nitidus; in elytris serierum octo punctis paulo minoribus.

Malgré sa grande ressemblance avec la précédente, je considère cette espèce comme différente par les caractères suivants: la taille est plus petite, la coloration un peu moins foncée, la forme moins large et moins convexe; les huit séries des élytres sont formées de points moins gros et moins imprimés.

De la même provenance que le précédent et également pris par le Dr. Bosscha à qui je me fais un plaisir de dédier cette espèce. — Quatre exemplaires dont deux dans la collection du Musée de Leyde.

Evreux, Décembre 1891.

NOTE V.

THE SPECIMENS OF THE GENUS TATARE IN THE
LEYDEN MUSEUM

BY

J. BÜTTIKOFER.

In looking over our specimens belonging to the genus *Tatare*, I had some difficulties in determining them and found that the localities mentioned on the labels of some of them would not agree with what Tristram (*Ibis* 1883) and Sharpe (*Cat. Birds Br. Mus.* VII) published about the habitat of the different species.

Our material consists in the following specimens:

1. *Tatare longirostris* (Gm.).

Sitta otatare Less. = *Tatare otaitensis* Less. — *Acrocephalus otatare* Tristram, *Ibis* 1883, p. 41.

General character: Feathers on upper surface brown with very broad pale yellow edgings, these edgings however very narrow on the head, and broadest on rump and upper tail-coverts. Lower surface sulphur-yellow, tail brown, very broadly tipped and on the inner web narrowly margined with yellowish white. Primary quills rather narrowly, the secondaries very broadly edged and tipped with pale yellow. Bill slender, straight.

	Wing	tail	culmen	tarsus
a. Huaheina (Mus. Godeffroy)	4.1	3.7	1.45	1.3
b. " (" ")	4.05	3.6	1.4	1.3
c. " (" " Coll. Garrett)	4.1	3.5	1.4	1.3
d. Tahiti (" " " ")	4.1	3.8	1.45	1.3
e. " ♂ Verreaux 1867.	3.9	3.4	1.35	1.3
f. " Voyage of the Coquille	4.1	3.6	1.4	1.3
g. Marquesas	4.0	3.5	1.5	1.3

Of these seven specimens the first five are, in every respect, true members of the species *longirostris*, about which nothing particular is to be said. Specimen *f* however has the two outermost tail-feathers and also the fifth on the left side entirely yellow, while on the right side only the second tail-feather is entirely yellow, the outermost one being only very broadly tipped with that color. With the exception of this particularities, which I consider to be a mere case of xanthism, the bird is in every respect a true *T. longirostris* and has nothing to do, as one might believe with regard to the mentioned entirely yellow tail-feathers, with Tristram's *T. mendanae* (Ibis 1883, p. 526, pl. I). To such a case of partial xanthism (resp. albinism) I would also refer the Vienna specimen mentioned by Pelzeln in Ibis 1873, p. 23, in which five of the rectrices on one side are entirely yellowish white, and four on the other side, while one is brown on the basal and yellow on the terminal half, and another statement of xanthism would be indicated by Gmelin who, in the original description of this species, says the tail to be yellow. Moreover the habitat of our bird in question is said to be Tahiti, while *T. mendanae* belongs to the Marquesas group.

Specimen *g*, with the Marquesas mentioned as its habitat, is in every respect a true *T. longirostris* and has nothing to deal with *T. mendanae*. I leave the question open whether the locality »Marquesas'' may be wrong or not, though, for my own, I would rather believe the first.

2. *Tatare mendanae* Tristr.

Under this species I propose to range a specimen in our Museum, which we received long ago from the Paris Museum, and which, according to its label, is collected by the Astrolabe-Expedition on the Island of Nuka-hiva, Marquesas.

General character: Above nearly uniform olive green, somewhat darker on the head, strongly tinged with yellow on rump and upper tail-coverts, and with but very slight

Notes from the Leyden Museum, Vol. XIV.

indications of the yellow edgings to the feathers, which are so characteristic in the preceding species. The primaries are narrowly, the secondaries and wing-coverts broadly edged with pale yellow, the superciliaries and the whole lower surface are of the same yellow as the underparts of *T. longirostris*, and also the tail is like in the preceding species, having all the rectrices brown, tipped with yellow. The under wing-coverts are yellow, the lower surface of the quills is brown, with whitish edges to the inner webs. The bill seems to me hardly more curved than the average of the preceding species. Wing 3.8; tail 3.45; culmen 1.2; tarsus 1.2. This specimen agrees, in general coloration, sufficiently with the colored plate given by Tristram in Ibis 1883, and also in the measurements as given in the original description, measurements in every respect inferior to those of the preceding species. Compared with Mr. Tristram's original description, however, our specimen shows some rather important differences, and even his description will not entirely agree with the plate annexed to it. In the plate the back is nearly uniform green, while in the description that part is said to resemble *T. otatare*, thus to be brown with broad yellow edges to the feathers.

As essential differences are mentioned by Tristram the much smaller size, the slightly incurved bill, the rich lemon-yellow under surface of the wing and, last not least, the entirely yellow two outermost pairs of tail-feathers.

From the short description of our specimen given above, we may see that it differs from that described by Tristram in having the upper surface nearly plainly olive green and the under surface not as yellow as *T. mendanae* is said to be, while the two outermost pairs of tailfeathers are like the rest and not entirely yellow.

In my opinion the essential characters of *T. mendanae* Tristr. which distinguish it at a glance from its congener *T. longirostris* are the considerably inferior size, connected with the rather plain olive green color of the upper sur-

face and perhaps also a slight incurvation of the bill. The more plain lemon-yellow color of the under surface of the wing as well as the entirely yellow outer two pairs of tail-feathers I would rather believe to be an individual case of xanthism, which latter seems to be rather common in the preceding species and which, therefore, will very likely be found in this present species as well.

3. *Tatare luscinia* Q. & G.

Acrocephalus mariannae, Tristr. Ibis 1883, p. 45.

Tatare mariannae, Sharpe, Cat. Birds Br. Mus. VII, p. 528.

General character: Upper surface olivaceous brown, more fulvous on rump and upper tail-coverts, wings and tail earthy brown, both slightly tipped with fulvous, a superciliary stripe, beginning at the nostrils, under wing-coverts and edge of wing as well as the whole lower surface of the body, except the brown thighs and flanks, pale yellow. Bill slender, very sensibly incurved, upper mandible pale brown, lower whitish, feet brown.

Wing 3.3; tail 3.0; culmen 1.4.

One specimen from Guam, Marianne Islands.

It might be of some value to say, perhaps, that all the three above mentioned species have the tail waved with narrow dark cross-bands when seen under certain lights, and these wavings are by no means stronger in *T. luscinia* than they are in the two preceding species, so that a division of the genus *Tatare* into a group with the tail unbanded and another with banded tail, as it is made by Mr. Sharpe in his key to the species of the genus *Tatare*, is rather inconvenient.

Having united the species of *Tatare* to the genus *Acrocephalus*, to which they certainly are very closely allied, Mr. Tristram was obliged to give the present species another name. As long, however, as the genus *Tatare* will be kept separate, and I hope it will, there is no reason whatever to alter the name of *T. luscinia* into *T. mariannae*.

Leyden Museum, November 1891.

NOTE VI.

ON THE SPECIFIC VALUE OF LEVAILLANT'S
TRAQUET COMMANDEUR

BY

J. BÜTTIKOFER.

In his *Histoire naturelle des oiseaux d'Afrique*, Vol. IV, p. 84, pl. 189, Levaillant described and figured, under the name of »Traquet Commandeur", a species of Bird, the type of which made part of the old Cabinet Temminck and is at present contained in the Collections of the Leyden Museum.

Our bird in question agrees very well with the colored plate given by Levaillant, with the exception of the shoulder-patch, which in the bird is white with a well pronounced rosy tinge, the white feathers being broadly tipped with rosy, especially so near the edge of the wing. The same is the case in Levaillant's plate, only is the rose color on the tips to the feathers much exaggerated.

This tropical West-African form, which seems to be very rare in collections, differs from its southern and eastern congeners by its entirely black head and the white shoulder-patch occupying the lesser and median wing-coverts only, leaving the greater ones entirely black.

The synonymy of the Traquet Commandeur, which has to bear the name of

Thamnolaea nigra (Vieill.),

will be as follows:

Oenanthe nigra, Vieill. N. Diet. d'Hist. Nat. XXI, p. 431 (1818).

Notes from the Leyden Museum, Vol. XIV.

Saxicola nigra, Gray, Gen. B. I, p. 179 (1846).

Myrmecocichla nigra, Bp. Consp. I, p. 302 (1850); Hartl. Orn. W. Afr. p. 65 (1857); Bocage, Orn. d'Ang. p. 268 (1881).

Myrmecocichla levaillanti, Rchw. J. f. O. 1882, p. 212.

Under the name of *Sylvia nigra*, Vieillot mentioned in Encycl. Méth. II, 1823, p. 489, a white-capped bird, so that this name has to be referred to the southern or eastern form. Whether the forms with white on head or throat, which are known under the names of *Thamnolaea shelleyi* Sharpe, *leucolaema* Rchw. and *arnotti* Tristr., belong all to one and the same species, as Dr. Reichenow suggests, or not, I dare not say, having at my disposal only the southern form with a white superciliary stripe, a form which I mentioned as *T. arnotti* in N. L. M. 1888, p. 227. (Mr. Van der Kellen, whom we owe that bird, has sent a female specimen of the same species, probably a young one, the whole plumage of which is olive brown, all the feathers above and below being edged with fulvous brown, while not the least trace of white is to be seen on head or wing-coverts).

Whenever the southern and eastern forms, with more or less white on the head and a large white wing-patch which occupies, with the exception of the tips, also the greater wing-coverts, might prove to belong to one and the same species, this latter would receive the name of

Thamnolaea arnotti (Tristr.)

with the following synonymy:

Sylvia nigra, Vieill. Encycl. Méth. II, p. 489 (1823).

Saxicola arnotti, Tristram, Ibis, 1869, p. 206, pl. 6.

Saxicola shelleyi, Sharpe, Layard's Birds of South Afr. p. 246.

Myrmecocichla leucolaema, Rchw. Orn. Centralbl. 1880, p. 181.

Leyden Museum, November 1891.

NOTE VII.

ON THE COLLECTIONS OF BIRDS,

SENT BY THE LATE A. T. DEMERY FROM THE
SULYMAH RIVER (W. AFRICA)

BY

J. BÜTTIKOFER.

The collecting work of our much lamented african naturalist, Mr. A. T. Demery, having been abruptly stopped last year by his unexpected death (N. L. M. 1891, p. 248), it will be of no little importance to publish a list of the species of birds, obtained during his sojourn on the banks of the Sulymah River, the more as Demery is the first and hitherto the only collector who explored this part of the vast country between Grand Cape Mount and the Isle of Sherbro. His chief station was Juring, a native town on the left bank of the Sulymah River, about 10 miles off the sea-coast. From Juring he made several excursions, especially higher up the river, which latter is practicable for row-boats and canoes much farther inland than most of the rivers in Liberia. The whole country between the Mahfa River (Grand Cape Mount) and Sherbro is rather flat and seems to have about the same aspect as the country round the Fisherman Lake. High forest, interrupted by savannahs, extensive reed-jungles and large swamps cover the alluvial plain, which is crossed by the Mannah-¹⁾, the Sulymah- and the Gallinas River, and, especially in its western or northern part, by an immense net of mangrove-skirted creeks, while, a few mi-

1) The Mannah River is, since 1887, the actual frontier between Liberia and the British Colony of Sierra Leone.

les west from the Gallinas River, and not far inland from the coast, is situated the Palma Lake, covered, especially in its eastern part, with numerous islands, and forming a convenient abode for swamp- and water-birds. As the oro- and hydrographical conditions of this territory are the same as in Liberia and there being no important difference in latitude, it is evident that their fauna will be principally the same. Amongst the few mammals sent by Demery from the Sulymah River, there was not one which had not been obtained in Liberia before and, with a few exceptions, the same is the case with the birds from that river, and even of these few exceptions it is by no means certain that they are really wanting in the ornis of Liberia.

The species, ten in number, which hitherto have not been found in Liberia, will be marked with an asterisk.

1. *Astur macroscelides* (Hartl.).

2. *Baza cuculoides* (Swains.).

An adult male with a very distinct chestnut cross-band on the hind neck, partially concealed under the elongated crest-feathers, and the longest of the rufous under wing-coverts barred with white.

This specimen is somewhat paler than the adult male I collected in Liberia and in which the under wing-coverts are uniform rufous, while the chestnut neck-band is entirely wanting. I believe the white bars on the under wing-coverts as well as the red neck-band to be the last remnants of the immature dress, these characteristical marks also being found in an immature female from the Gold Coast and two females of the South African form, known as *Baza verreauxi*.

The chief character, which distinguishes this latter form from *B. cuculoides*, is said to be the white-banded under wing-coverts, and these bands existing in our nearly adult West African male, will, therefore, lose a great deal of specific value, the more as the "adult" specimen of *Baza verreauxi*, figured in Sharpe's edition of Layard's Birds of

Notes from the Leyden Museum, Vol. XIV.

South Africa, shows some remains of longitudinal spots on the breast, which spots are undoubtedly a sign of immaturity. In our bird from the Sulymah River the cross-barring on breast and flanks is complete.

Unfortunately we do not possess an adult male from South Africa, and therefore I do not wish to make out whether, after all, Schlegel was correct or not in uniting both forms under the name of *Baza cuculoides*.

3. *Syrnium nuchale* (Sharpe).

An adult female. It differs from the adult male by its larger size and in having the white cross-bands on the under surface and the white spots on the upper wing-coverts much broader. Length of wing 24 cm., while in our adult male from Liberia it is only 21,7.

4. *Scotornis longicauda* (Drap.).

*5. *Macrodipteryx longipennis* (Shaw).

Adult male and female, shot in the Savannahs near Juring. The male has the two accessorial feathers between the primaries and secondaries not fully developed, the bare basal part of the shaft not reaching farther than the tips of the primaries. The vanes, about 15 cm. long, are entirely black on the under surface while the upper surface is broadly barred across with ashy gray. The rufous collar on the hind neck is very distinct and quills and tail-feathers are entirely destitute of any white markings, being regularly banded across with dark brown and rufous. Wing 16,7 cm., tail 10,5 cm. The female does not differ from the male in color, only the pair of long waving wing-feathers are wanting. Wing 16 cm., tail 10,4 cm. The two specimens in our Museum, one from the Senegal, the other from the Gold Coast, both with exceedingly long accessorial wing-feathers, have the vanes of the latter above and below entirely black, showing however, by careful examination, some faint traces of light cross-bars on the upper surface.

*6. *Psalidoprocne obscura*, Hartl.

An adult male, obtained on October 4th, is similar to

our Gold Coast-specimens, amongst which is the type of the species. This latter is not a fully adult specimen, its wings and tail are shorter than in the adult stage and the gloss on the upper surface is not as metallic green as in the adult. Wing 9,5 cm., outermost tail-feather 10 cm. Iris brown, bill and legs black.

7. *Eurystomus afer* (Lath.).
8. » *gularis*, Vieill.
9. *Halcyon malimbica* (Shaw).
10. *Ceryle maxima* (Pall.).
11. *Corythornis cyanostigma* (Rüpp.).
12. *Ispidina picta* (Bodd.).
13. » *leucogastra* (Fras.).
14. *Alcedo quadribrachys*, Bp.
15. *Merops superciliosus*, L.
16. » *erythropterus*, Gm.
17. » *gularis*, Shaw.
18. *Cinnyris cyanolaemus* (Jard.).
19. » *obscurus* (Jard.).
20. » *johannae*, Verr.
21. *Anthreptes hypodilus* (Jard.).
22. *Prinia mystacea*, Rüpp.
23. *Camaroptera concolor*, Hartl.
24. » *brevicaudata* (Cretzschm.).
25. *Hylia prasina* (Cass.).
26. *Cossypha poensis*, Strickl.
27. *Alethe diademata* (Bp.).
28. *Crateropus atripennis*, Swains.
29. *Xenocichla eximia* (Hartl.).
30. » *canicapilla* (Hartl.).
31. *Criniger barbatus* (Temm.).
32. » *verreauxi*, Sharpe.
33. » *simplex* (Hartl.).
34. » *leucopleurus* (Cass.).
35. » *indicator*, Verr.
36. *Chlorocichla gracilirostris* (Strickl.).
37. *Andropadus latirostris*, Strickl.

Notes from the Leyden Museum, Vol. XIV.

38. *Andropadus curvirostris*, Cass.

39. » *virens*, Cass.

40. *Pycnonotus barbatus* (Desf.).

41. *Acrocephalus turdoides* (Meyer).

Adult male and female, shot in high cane on February 28th and March 4th 1890. Both specimens are richly tinged with fulvous on the lower surface, still richer than our specimens in the early spring plumage. Nothing is known as yet about the arrival of these birds on the West-Coast in autumn and their departure in spring.

42. *Motacilla flava*, L.

43. *Anthus pyrrhonotus*, Vieill.

44. *Cassinia finschi*, Sharpe.

45. *Terpsiphone nigriceps* (Hartl.).

*46. *Pratincola rubetra* (L.).

An adult male, obtained March 3rd 1890, in splendid breeding plumage.

47. *Diaphorophya castanea* (Fras.).

48. » *blissetti*, Sharpe.

49. *Bias musicus* (Vieill.).

50. *Dicrurus atripennis*, Swains.

51. » *modestus*, Hartl.

52. *Fraseria cinerascens* (Hartl.).

53. *Sigmodus caniceps*, Bp.

54. *Telephonus senegalus* (L.).

55. *Nicator chloris* (Less.).

*56. *Laniarius poliochlamys*, Gadow.

Several specimens. Iris white, bill black, feet bluish white.

57. *Chaunonotus sabinei*, J. E. Gray.

58. *Dryoscopus leucorhynchus* (Hartl.).

A male with white bill, collected March 10th 1890. Both the males collected at Robertsport and one of which was shot from a nest with eggs, have the bill entirely black. All three specimens are jet-black and seem to be fully adult.

59. *Oriolus brachyrhynchus*, Swains.

60. *Corvus scapulatus*, Daud.

Notes from the Leyden Museum, Vol. XIV.

61. *Lamprocolius cupreicauda*, Hartl.

62. *Pholidauges leucogaster* (Gm.).

63. *Malimbus rubricollis* (Swains.) ¹⁾.

Sycobius rubricollis, Bütt. N. L. M. 1885, p. 195; 1886, p. 259.

Malimbus malimbicus, Bütt. N. L. M. 1888, p. 90; id. Reisebilder aus Liberia, II, p. 475.

Malimbus bartletti, Sharpe, Cat. Birds, Br. Mus. XIII, p. 479.

In his above mentioned catalogue, Dr. Sharpe separates, under the name of *M. bartletti*, the birds from Upper Guinea (Liberia to the Gold Coast) from those from Lower Guinea (Gaboön to Congo), which he considers to be the true *M. rubricollis*. The reason for this separation is said to be the difference in the tinge of red on crown and hind neck, which ought to be crimson in the true *M. rubricollis* from Lower Guinea, while it is scarlet or vermilion in the birds from Upper Guinea (*M. bartletti*). At the moment we possess only one specimen from Lower Guinea (Congo) which really has head and hind neck more crimson than those from Liberia and the Gold Coast, but the fact is that it also shows a remarkable tinge of vermilion and can, therefore, hardly be specifically separated from the birds from Upper Guinea.

64. *Malimbus malimbicus* (Daud.).

Sycobius cristatus (Vieill.). Bütt. N. L. M. 1885, p. 195.

Malimbus cristatus, Bütt. N. L. M. 1889, p. 124; id. Reisebilder aus Liberia, II, p. 475.

An adult and an immature male. The crest in the males from Liberia and the Sulymah River are constantly less developed than in our specimens from the Gold Coast, and much less so than in a specimen from Angola (probably erroneously for Loango).

In the genus *Malimbus*, and more than in any other in this present species, many questions about the distribution of the red color in connection with the sex and the

1) See the explanations about the much entangled synonymy of *Malimbus malimbicus* and *M. cristatus* in Sharpe, Catalogue of Birds Br. Mus. XIII, p. 478.

different stages of age are still unsettled. Dr. Hartlaub, in his „Ornithologie Westafrika's", says that in *M. malimbicus* (the *Sycobius cristatus* of his) the female resembles the male in the distribution of the red, but that the crest in the female is wanting and the bill flesh-color instead of black. This statement is adhered to by Prof. Bocage, quoting it without additional remarks in his „Ornithologie d'Angola."

Dr. Sharpe, however, in his Catalogue of Birds, Vol. XIII, p. 480, says that the female differs from the male in having the red color of the (uncrested) crown continued onto the hind neck, and that the throat is black, generally intermixed with some red feathers, while this part is bright crimson in the male.

On ground of the material before me (three skins from the Sulymah River, one from Liberia, eleven stuffed specimens from the Gold Coast and one from Lower Guinea) I cannot agree with Dr. Sharpe's opinion as developed above, and rather yield to that of Dr. Hartlaub's, brought forward in his Ornithologie Westafrika's. All our specimens from the Gold Coast are collected by the late Dutch Governor Nagtglas, and those which I consider to be adult are all well-sexed, while two of the other four are marked „avis jun." As the annotations made by Nagtglas have always proved to be very trustworthy, there is no reason to doubt their accuracy in this case. The fact now is that all the birds sexed as males, four in number (with inclusion of the specimen from Lower Guinea), have the throat, sides of face and the crested crown with the exception of the black frontal band and the black hind neck, red; and four specimens, all females, are precisely colored like the males, differing from the latter only by their want of a crest. Immature birds, and as such has the bird to be considered, described by Dr. Sharpe as the adult female, have the whole head, including the front, hind neck and sides of neck, red; throat and fore-neck are entirely black. In a more advanced stage the black throat becomes intermixed

Notes from the Leyden Museum, Vol. XIV.

with red feathers which gradually occupy the entire throat, leaving the chin black. In the meantime, i. e. after the throat has become almost entirely red, a different process is going on with the hind neck, where some black feathers begin to make their appearance, continually increasing in number until the whole hind neck has changed his originally red colour into black, and the same is the case on the fore-head, which later on becomes black in males and females. After the birds have assumed the plumage of the adult, or sometimes even before, the distinctive character of the male, the crest, begins to get its full length, while in the immature stage the males cannot be distinguished from the females. Amongst our specimens which I consider to be immature, i. e. not to have assumed the last stage of plumage, we have one with entirely black throat and but few red feathers on the chest, and other specimens represent the gradual change into the red throat of the adult.

If the above developed ideas prove, by further investigations, to be correct, a concise diagnosis of the species would be as follows:

Adult male: General color sooty black, some of the feathers, especially on the back, margined with a metallic gloss; base of fore-head, lores, circlet round the eye, angle of mouth and the chin also black; crested crown, sides of head, sides of fore-neck as well as the entire throat and upper chest, crimson.

Adult female: Similar to the male, but no occipital crest.

Immature male and female: Similar to the adult female, but the throat black instead of red, in more advanced stage intermixed with red feathers, the red of the crown continued forward right down to the base of the bill, and backward onto the hind neck. The change of the color is performed by a complete moult.

65. *Malimbus nitens* (Gray).

A large series was collected, which contains a number

Notes from the Leyden Museum, Vol. XIV.

of specimens representing a very interesting transitional stage of plumage, analogous in its development to that described in the preceding species. The adult, males as well as females are easily recognized by the red lower throat and chest, while the rest of the plumage is sooty black, with broad glossy edgings to the feathers on the upper surface. One of these specimens, probably the youngest, has the whole chin, throat and chest, and also the centre of the crown entirely red, while the rest of the head is intermixed with red feathers. Another specimen has the chin already black, but still intermixed with red, while numbers of red feathers are found between the black plumage of the crown and the sides of the head, and some of the feathers on the breast are broadly tipped with brownish red. A third specimen, still nearer the adult stage, has the chin entirely black, but the black crown and sides of head show some sparsely distributed red feathers. The first specimen here described, with the entirely red chin and throat, has moreover a small spot of white feathers on the breast, and the same is the case, even in a much higher degree, with the fully adult specimen mentioned in my first paper on Liberian birds (N. L. M. 1885, p. 196).

The young bird is smoky brown with the shield on the chest dark fulvous, intermixed with young glossy red feathers, which also make their appearance on the head.

66. *Malimbus scutatus* (Cass.).

This species, easily distinguished from all its congeners by its scarlet under tail-coverts, is represented by a single specimen in that peculiar transitional stage of plumage, upon which Capt. Shelley, *Ibis*, 1887, p. 41, pl. II, based his *Malimbus rubropersonatus*, a species which afterwards is recognized as an immature specimen of *M. scutatus* and reunited with this latter by Dr. Sharpe in his *Catalogue of Birds*, Vol. XIII, p. 482. But while the above mentioned coloured plate of Capt. Shelley's does perfectly agree with one of our birds from the Gold Coast, the specimen from the Sulymah River, which is a female, has the red feathers

on the fore-head intermixed with black ones, the cheeks are already entirely black, as well as the sides of chin and throat, and it is evident that the red on chin, upper throat and the fore-head very soon would have given way to the black color, peculiar to the adult female of this species. (About the immature specimens from Liberia, see my remarks in N. L. M. 1885, p. 196). The bill in young birds is nearly white and through all the transitional stages becomes continually darker until it has got the black color of the adult stage.

The bird from the Cameroons, mentioned by Dr. Sharpe under the head of *M. scutatus* in his Catalogue, belongs certainly to this species. Although none of the specimens in our Museum have the red patch on the chest longitudinally divided by a black line, nearly all, and especially the immature ones, have the red patch more or less deeply notched from below, and this is, in a very high degree, the case with a fully adult specimen from the Gaboon.

67. *Hyphantornis aurantius* (Vieill.).

*68. " *superciliosus*, Shelley.

Two males, shot in the cane-jungles near Juring.

69. *Sitagra brachyptera* (Swains.).

Hyphantornis brachyptera, Bütt. N. L. M. 1885, p. 189.

Symplectes brachypterus, Bütt. N. L. M. 1886, p. 259.

A large series of these birds having been collected, the species seems to be very common on the Sulymah River, while at Robertsport and farther down the coast of Liberia it is rather rare.

70. *Pyromelana flammiceps* (Swains.).

*71. *Coliopasser ardens* (Bodd.), var. *concolor* (Cass.)¹⁾.

Ten male specimens, all belonging to the northern variety in which the red cross-band is entirely wanting. It

1) I cannot see sufficient reason for rejecting Rüppell's generic name of *Coliopasser* in favor of *Penthetria* of Cabanis, on account of its unscholarly composition, as it can easily be altered, and has already been done so (N. L. M. 1889, p. 74 and J. f. O. 1889, p. 283) into *Coliopasser*. Corrections of such names are not rare in ornithological literature.

is on the authority of eminent Ornithologists as Cabanis and Shelley (see Sharpe, Cat. Birds Br. Mus. Vol. XIII, p. 227) that I consider my entirely black birds to be a variety of *C. ardens*, a variety which has been named *Vidua concolor* by Cassin. They have been killed in the cane-jungles near Juring during the months of September, October and November.

72. *Penthetriopsis macrura* (Gm.).

Penthetria macroura, Bütt. N. L. M. 1885, p. 197.

Coliuspasser macrourus, Bütt. N. L. M. 1886, p. 259; 1881, p. 91.

Coliopasser macrurus, Bütt. N. L. M. 1889, p. 134.

Numerous specimens, found in the same reed-jungles as the preceding species.

73. *Spermestes cucullata*, Swains.

74. *Nigrita emiliae*, Sharpe.

75. » *bicolor* (Hartl.).

76. *Corythaix macrorhynchus*, Fras.

*77. » *buffoni* (Vieill.).

*78. *Schizorrhis africana* (Lath.).

79. *Berenicornis leucolopha*, Sharpe.

80. *Tockus semifasciatus* (Temm.).

81. *Pogonorrhynchus hirsutus* (Swains.).

82. *Trachyphonus goffini* (Schleg.).

83. *Mesopicus pyrrhogaster* (Malh.).

84. *Centropus leucogaster* (Leach) ¹).

Centropus francisci, Bütt. N. L. M. 1885, p. 222; 1886, p. 264;
1888, p. 96; 1889, p. 135.

85. *Centropus senegalensis* (L.).

86. *Ceuthmochares aeneus* (Vieill.).

87. *Coccystes cafer* (Licht.).

88. *Chrysococcyx klaasi* (Steph.).

89. *Treron calva* (Temm.).

90. *Turtur semitorquatus* (Rüpp.).

91. *Peristera tympanistria* (Temm.).

92. *Vanellus inornatus*, Swains.

1) See Hargitt, Cat. Birds Br. Mus. Vol. XIX, p. 358.

93. *Charadrius forbesi* (Shelley).

An adult female, shot in an old plantation near Juring.

94. *Ardea atricapilla*, Afzel.

*95. *Ardeola ralloides*, Scop.

A nearly adult male, shot February 20th 1890 on the banks of the Sulymah River.

*96. *Fuligula fuligula* (L.).

An adult female, shot near the Sulymah River (no date mentioned).

Leyden Museum, January 1892.

NOTE VIII.

A NEW LUCANOID BEETLE FROM JAVA

DESCRIBED BY

C. RITSEMA Cz.

In a consignment of beetles, lately received from Mr. J. D. Pasteur and brought together by himself in Western Java (Mt. Poentjak, on the frontier between the districts of Buitenzorg and Preanger), I found among a fine series of *Cladognathus giraffa* Oliv. a specimen which was at once distinguished from the others by its more slender mandibles which were regularly curved downwards, and by the rounded, not obliquely truncate anterior angles of the prothorax. A more careful examination of this specimen showed me clearly that it had nothing to do with *Cl. giraffa* but that it was a very close ally of the interesting *Prosopocoelus decipiens* Parry ¹⁾ from Malabar. The Javanese species is certainly undescribed and I propose to call it after its discoverer:

Prosopocoelus Pasteuri.

Length of my unique male specimen (without mandibles) 44 mm., that of the mandibles 23,5 mm. — Dull black, the mandibles and the elytra very faintly shining, the latter along the suture with a broad, dark red streak, which is however only visible under certain lights ²⁾).

The mandibles are long and slender, slightly waved, strongly curved inwards at the tip, and regularly curved downwards; they are rounded, but flattened and broadest a little before the base in consequence of a toothlike dilatation on their inner margin; beyond the middle a slender tooth is present, and the sharply pointed tip is preceded by an irregular flattened tooth; between this latter and the post-median tooth the inner margin is indistinctly

1) Nederl. Tijdschr. v. Entom. VIII (1865), p. 148; pl. 10, fig. 1, 1a.

2) A similarly colored spot is present on the sides of the pronotum, and another transverse one on the apical ventral segment.

crenulate; the extremely fine and dense sculpturing of the mandibles is intermixed with very distinct punctures.

The head is square, slightly narrower than the front of the thorax, declivous and unevenly depressed on the frontal half; the front edge is semicircularly emarginate and almost perpendicularly sinking towards the clypeus, which latter is broadly trapezoidal and has on the middle of its front margin a small, rounded projection; the lateral front angles of the head are obliquely truncate, the canthus is narrow, faintly emarginate in the middle and extends as far as the middle of the eye; in front of the thoracical angles the head is slightly swollen; the surface is very densely covered with extremely fine granulations.

The prothorax is somewhat broader at the base than in front, and strongly convex along the middle; the sides are straight, the front angles protruding and rounded, the hind angles very broadly rounded and their hind margin turned upwards; the front margin of the prothorax is deeply bisinuate, the hind margin faintly so; the sculpturing agrees with that of the head. The scutellum is large and slightly transverse, its surface coriaceous, without distinct punctures.

The elytra are coriaceous and densely covered with extremely fine punctures.

The intercoxal part of the prosternum is conically prolonged backwards. The femora and tibiae, as well as the under surface of the insect are opaque, with the exception however of a large triangular spot on the metasternum posteriorly and of the abdomen which are subshining; the latter is sparingly and finely punctate, its apical segment more strongly so.

The outer edge of the front tibiae is irregularly crenulate, some of the crenulations dentiform; the middle and hind tibiae unarmed.

A single ♂ of the forma maxima in the Leyden Museum.

Leyden Museum, January 1892.

NOTE IX.

OBSERVATIONS SUR LES ESPÈCES DU GENRE
OXYOPISTHEN ET DES GENRES VOISINS

PAR

W. ROELOFS.

Depuis ma dernière publication d'espèces du genre *Oxyopisthen* et des genres du même groupe ¹⁾, j'ai eu connaissance du travail de Mr. Aurivillius sur ces insectes, et j'ai su examiner un grand nombre d'individus, surtout dans la collection de Mr. van de Poll, acquis par lui depuis ma publication mentionnée. Cet examen ne m'a pas fait connaître de nouvelles espèces, mais des sexes et des variétés que je n'avais pas vus.

Mr. Aurivillius a décrit un certain nombre des mêmes espèces que j'ai publiées ²⁾. Je veux communiquer ici quelques observations que la comparaison des descriptions et un nouvel examen des espèces m'ont suggérés.

Oxyopisthen vittatum Roel. ³⁾

Mr. van de Poll a acquis depuis mon travail, deux individus auxquels s'applique la description de *linea-alba* de

1) Notes from the Leyden Museum, Vol. XIII (1891), p. 167.

2) La publication de Mr. Aurivillius est d'un petit nombre de jours postérieure à celle de mon travail; le „Öfversicht af Kongl Vetenskaps-Akademiens Förhandlingar, 1891, N° 6" a été publié le 29 Août, — les „Notes from the Leyden Museum, Vol. XIII, N° 3" ont été publiés le 20 Août 1891.

3) Notes from the Leyden Museum, Vol. XIII (1891), p. 119.

Notes from the Leyden Museum, Vol. XIV.

Thomson. Mr. Desbrochers des Loges, qui possède les Calandrides de la collection Thomson, m'écrit qu'il n'a pas trouvé cette espèce dans la collection; le type paraît par conséquent perdu ou égaré. Comparaison faite de mon *O. vittatum* avec *O. linea-alba* Thomson de la collection van de Poll, je crois que ces insectes appartiennent à la même espèce. Il est vrai que mon *vittatum* (individu unique du Musée de Leyde) n'a pas de tache blanche sur les élytres, mais cette tache est plus grande dans un des deux individus de *linea-alba* que dans l'autre, ce qui prouve qu'elle est variable et je crois que son absence dans mon *vittatum*, provient de ce que l'exemplaire qui m'a servi de type est un peu usé. Les autres caractères s'accordent, sauf que dans l'individu du Musée de Leyde, le pygidium est plus allongé et pointu. De plus je ne découvre point de dent aux cuisses antérieures des *linea-alba*, tandis qu'elle est très visible chez le *vittatum*. Ces différences me paraissent sexuelles. Chez les trois individus sous mes yeux, le rostre est plus courbé et moins gros que chez les congénères de l'espèce. Un nouvel examen me démontre que dans ma description de *vittatum* l'indication de la forme de la massue des antennes manque d'exactitude: elle est peu élargie au bout mais pas, comme j'avait dit, «presque cylindrique». Chez *linea-alba* elle est de même forme; l'espèce rentre donc dans le genre *Ichthyopisthen* Auriv. ¹⁾

Les espèces suivantes lui sont congénères:

Oxyopisthen deplanatum Roel. ²⁾

Depuis ma publication de cette espèce, d'après un unique du Musée de Leyde, j'en ai vu un individu de la collection

1) Mr. van de Poll, ayant examiné l'*Anoxyopisthen Büttneri* Kolbe, s'est assuré que la 10^e strie des élytres n'est pas entière comme l'auteur avait indiqué. — Cette différence des stries serait, à ce qu'il paraît, le seul caractère générique de *Anoxyopisthen*, et l'espèce de Mr. Kolbe serait du même genre que les *Ichthyopisthen* de Mr. Aurivillius. Dans ce cas le nom générique de M. Kolbe aurait la priorité.

2) Notes from the Leyden Museum, Vol. XIII (1891), p. 116.

Notes from the Leyden Museum, Vol. XIV.

de Mr. Duvivier de Bruxelles. Celui de Leyde provient de Niam-Niam, celui de Mr. Duvivier a été capturé par son frère à Ibembo au Congo. L'espace mat à côté de la carène du pygidium, dont il est parlé dans ma description, est occupé dans l'individu, moins usé, de Mr. Duvivier par une tache blanche bien marquée. Une toute petite tache sur le côté de la base du dernier segment m'était échappée lors de ma description.

L'espèce est voisine de *clavatum* Roel., comme Mr. Aurivillius observe avec raison.

Oxyopisthen clavatum Roel. = *Ichthyopisthen rufoclavatum* Auriv.

Je dois ajouter à ma description que l'extrémité des cuisses postérieures est noire. La ligne médiane du prothorax, dont parle Mr. Aurivillius et que je ne mentionne pas, est si faible que dans certains individus on n'en trouve pas de trace. L'appendice remarquable du premier article des tarses postérieurs, décrit par Mr. Aurivillius, m'était échappé.

L'extrémité du pygidium de la femelle subit des modifications de forme assez sensibles dans les huit individus que j'ai sous les yeux.

Les carènes latérales finissent presque toujours en pointe saillante (toujours moins forte que la carène médiane), mais chez un des exemplaires elles ne sont pas saillantes, de façon à rapprocher la forme du pygidium de celle du mâle. Dans un autre individu, le bout du pygidium n'est pas symétrique. — La dent, ou plutôt l'élargissement anguleux des tibias postérieurs, est un caractère sexuel du ♂; il est plus ou moins prononcé et parfois très faible. Les articles deux à six du funicule sont plus larges dans le ♂ que dans la ♀.

Ichthyopisthen convexicollis Auriv.

La collection van de Poll contient un individu conforme à la description de cette espèce donnée par Mr. Aurivillius,

Notes from the Leyden Museum, Vol. XIV.

et un second individu à pattes entièrement noires. Le premier porte l'étiquette: »Murray, Old Calabar'', le second seulement »West-Africa''.

Oxyopisthen Büttikoferi Roel. ¹⁾

La base du prothorax presque droite fait hésiter Mr. Aurivillius de ranger l'espèce dans son genre *Ichthyopisthen*; je ne pense pas qu'une légère différence de structure suffit pour l'en exclure.

Oxyopisthen nitidum Roel.

Je n'ai vu de cette espèce qu'un individu ♂ dans la collection van de Poll. Elle est la même que *Ichthyopisthen albolineatum* Auriv.

Haplorhynchus Valdaui ♀ Roel. = *Cyrtopisthen rubicundum* Auriv.

L'anatomie, faite par Mr. van de Poll de sept individus de sa collection, lui a appris que la description de *H. Valdaui* Auriv. s'applique à 4 mâles, celle de *Cyrtopisthen rubicundum* du même auteur et de mon *H. Valdaui* ♀, à 3 femelles. La différence des deux formes est donc une différence sexuelle, comme je l'avais supposé. — Il est singulier que la couleur brun-rouge de la femelle ne m'a pas frappé; elle est plus sensible vue dans un certain jour. Mr. Aurivillius paraît n'avoir pas remarqué la forme des hanches antérieures, dont je parle dans ma description.

Oxyopisthen suturale Roel. = *Stenophida trilineata* Auriv.

Lors de ma description de cette espèce, je n'ai pas prêté une attention suffisante à la construction des tarsi, différente de celle des autres espèces. Elle justifie, jointe aux yeux subcontigus en dessous et à la forme du prothorax et de l'écusson, la place de l'espèce dans un genre séparé.

1) Notes from the Leyden Museum, Vol. XIII (1891), p. 118.

Notes from the Leyden Museum, Vol. XIV.

Je ne saurais décider, pas plus que Mr. Aurivillius, si elle peut rester réunie avec *linearis* Pascoe, qui forme le type du genre *Stenophida* de cet auteur. La garniture de poils des quatre fémurs antérieurs est propre à la ♀. Je remarque dans les deux individus (♂ et ♀) que j'ai sous mes yeux, un espace luisant, à ponctuation assez forte devant la ligne blanche du prothorax.

Acherus nigricans Roel.

Depuis ma publication de cette espèce, Mr. van de Poll a acquis un second individu, également ♀, dont les cuisses sont rouges jusque près de leur extrémité. L'anatomie des deux individus donne la certitude de leur sexe. La forme du rostre est remarquable par son analogie avec celle de la ♀ de *Haplorhynchus Valdaui*.

La garniture de poils du dessous du rostre se trouve chez d'autres femelles de Curculionides, entre autres chez les femelles de certains *Poteriophorus*; il me paraît probable que ces poils, joints à la structure particulière du rostre dans ce sexe, doivent jouer un rôle dans la déposition de l'oeuf lors de la ponte.

La Haye, 16 Janvier 1891.

NOTE X.

A NEW LONGICORN BEETLE

DESCRIBED BY

C. RITSEMA Cz.

Euclea nodicornis, n. sp. ♂.

Length $17\frac{1}{2}$ mm. — Strongly resembling *E. nigratarsis* Pascoe ¹⁾ of which I have a male specimen before me ²⁾, but differing from it in the following characteristics: the new species is somewhat broader; its 3rd antennal joint is slightly longer, more slender, more distinctly incurvate and covered all over with a pubescence of a pale ochraceous colour ³⁾; the 4th joint is more strongly swollen at the tip, and the 5th joint is thicker and consequently more strongly contrasting with the 6th; the prothorax becomes broader towards the base, and the scutellum is strongly transverse; finally the two basal joints of the tarsi do not show a black but an ochraceous pubescence. Each elytron is faintly notched at the end in an oblique direction which gives the apex of the elytra the appearance of being slightly prolonged at the suture.

Hab. Amboyna (Ludeking). — A single male specimen in the collection of the Leyden Museum.

Leyden Museum, December 1891.

1) *Longicornia malayana*, p. 150.

2) It may be said here that the pubescence of this specimen, which measures 15 mm. in length, is very pale ochraceous approaching to grey, and that the derm of the antennae and legs has a dark blue metallic hue. It originates, like the type, from Amboyna (Ludeking).

3) In *nigratarsis* Pascoe the colour of the pubescence on the basal two thirds of this joint is grey, on the apical third it is black.

NOTE XI.

DESCRIPTIONS DE TROIS ESPÈCES NOUVELLES DE
LYCIDES DE BORNÉO

PAR

J. BOURGEOIS,

ancien Président de la Société entomologique de France.

M. Ritsema ayant bien voulu me communiquer, par l'entremise de M. Fairmaire, quelques Lycides récoltés dans la partie occidentale de l'île de Bornéo, j'y ai trouvé trois espèces encore inédites dont je donne ci-dessous les descriptions, en les faisant suivre de la liste des Lycides de Bornéo décrits jusqu'à ce jour.

1. *Xylobanus Ritsemæ*, n. sp.

Valde elongatus, parallelus, opacus, subtilissime pubescens, niger; rostro nullo; mandibulis rufis; antennis compressis, profunde serratis; prothorace nitidiusculo, latitudine basali longiori, apicem versus vix attenuato, undique pulvinato-marginato, antice rotundato, lateribus fere parallelis, medio haud vel fere inconspicue coarctatis, angulis anticis rotundatis, posticis rectis, retusis, disco distincte 7-areolato, areola dorsali angusta, elongato-rhomboïdali, antice in carinam evadente; scutello apice triangulariter exciso; elytris subparallelis, prothorace paullo latioribus, 4-costatis, intervallis clathris transversis uniseriatim quadrato-areolatis, costis, clathris transversis sicut et sutura in triente anteriori rufo-flavis. — Long. $8\frac{1}{2}$ mill.; lat. 2 mill.

Hab. Bornéo occid.: Sambas (Dr. Bosscha). — Un seul exemplaire dans la collection du Musée de Leyde.

Notes from the Leyden Museum, Vol. XIV.

Bien distinct des *X. humilis* C. Waterh. et *vetulus* Bourg., dont il rappelle le système de coloration des élytres, par la forme du prothorax qui est allongé, non ou à peine rétréci en avant, arrondi en courbe régulière au bord antérieur, avec les angles postérieurs droits, nullement sailants. Les aréoles intercostales des élytres sont assez régulièrement carrées, sauf vers la base, où elles sont plus serrées et transversales.

2. *Trichalus hypocrita*, n. sp.

Valde elongatus, parallelus, omnino niger vel fuliginoso-niger; rostro distincto, brevi; prothorace apicem versus angustato, latitudine basali vix breviori, antice rotundato, lateribus reflexis, in medio leviter coarctatis, angulis posticis divaricatis, acutis, basi profunde bisinuata, disco areola longitudinali, sat angusta, bilanceolata, a basi usque fere ad apicem extensa exarato, margine antico irregulariter et grosse punctato; scutello quadrato, apice arcuatim emarginato; elytris prothorace distincte latioribus multoque longioribus, subparallelis, 7-costatis, costis alternis minus elevatis, prima basi trifida, intervallis clathris transversis uniseriatim quadrato-areolatis; corpore subtus nitidiori, trochanteribus femorumque stirpe saepius dilutioribus, abdomine obscure chalybeo-micante.

♂. *Antennis paullo longioribus; abdominis segmento ventrali penultimo profunde triangulariter emarginato, ultimo triangulari, bivalvato.*

♀. *Abdominis segmento ventrali ultimo semi-lunato.*

Long. $8\frac{1}{2}$ —10 mill.; lat. 2— $2\frac{1}{2}$ mill.

Hab. Bornéo occid.: Sumbas (Dr. Bosscha). — Un seul exemplaire (♀) dans la collection du Musée de Leyde. — Aussi trouvé à Sarawak (ma collection).

Se rencontre également à Sumatra (Wallace) et à Singapore, d'après un exemplaire communiqué par M. Fairmaire.

Cette espèce présente un pronotum conformé à peu près comme celui du *T. anceps* C. Waterh. (Illustr. typ. Sp.

Notes from the Leyden Museum, Vol. XIV.

Col., I, p. 69, pl. XVII, fig. 2), et pourrait être confondue à première vue avec la variété à élytres entièrement noires de cette espèce (Bourg., Ann. Mus. Civ. Genova, XVIII, 1883, p. 645); mais la réticulation régulière et distinctement bisériée des intervalles intercostaux des élytres ainsi que le reflet bleu-métallique de l'abdomen permettront de l'en distinguer facilement. Sa taille est aussi sensiblement supérieure à celle du *T. anceps*.

3. *Trichalus flavidus*, n. sp.

Sordide flavido-testaceus; capite, antennis pedibusque nigris, elytris apice fuscescentibus; rostro brevissimo; prothorace trapeziformi, latitudine basali breviori, apicem versus valde angustato, lateribus fere parallelis, angulis anticis bene distinctis, posticis productis, acutis, disco antice et ad latera irregulariter punctato, fossula mediana profunda, bilanceolata, antice in carinulam evadente exarato; scutello postice leviter emarginato; elytris prothorace vix latioribus, parallelis, 7-costatis, costis alternis multo minus elevatis, prima basi trifida, intervallis clathris transversis sat irregulariter quadrato-areolatis; corpore subtus nigro-fusco. — Long. 6 mill.; lat. 2 mill.

Hab. Bornéo occid.: Sambas (Dr. Bosscha). — Un seul exemplaire dans la collection du Musée de Leyde.

Cette espèce est voisine du *T. serraticornis* Fabr. (Oliv., Entom., II, 29, p. 12, pl. I, fig. 14 et C. Waterh., Illustr. typ. Spec. Col., I, p. 71, pl. XVI, fig. 10); elle en diffère surtout par la forme du prothorax, beaucoup plus atténué en avant, trapézoïdiforme, tandis qu'il est subcarré dans *serraticornis*. On ne pourra pas non plus la confondre avec le *T. longicollis* Bourg., de Manille, dont elle s'éloigne par le prothorax moins allongé, à fossette discale large et non linéaire, par la coloration, etc.

Obs. Les *Lycus* (*Lycostomus*) *Gestroi* Bourg. et *Metriorhynchus Kirschi* C. Waterh., déjà signalés de Sarawak, ont aussi été trouvés à Sambas, le premier également à Sintang.

Notes from the Leyden Museum, Vol. XIV.

LISTE DES LYCIDES DE BORNEO DÉCRITS JUSQU'À CE JOUR.

1. *Lycus (Lycostomus) ferrugineus* Fabr.
2. » » *Gestroi* Bourg.
3. » » *Waterhousei* Bourg.
4. *Bulenides cognatus* Bourg.
5. » *dubius* C. Waterh.
6. » *indus* Kirsch.
7. » *obsoletus* C. Waterh.
8. » *pauperulus* Bourg.
9. *Cautires excellens* C. Waterh.
10. *Xylobanus elusus* C. Waterh.
11. » *fumigatus* C. Waterh.
12. » *humilis* C. Waterh.
13. » *reticulatus* C. Waterh.
14. » *Ritsemae* Bourg.
15. » *senex* C. Waterh.
16. » *vetulus* Bourg.
17. *Taphes brevicollis* C. Waterh.
18. » » var. *frontalis* C. Waterh.
19. *Metanaeus conformis* C. Waterh.
20. *Trichalus anceps* C. Waterh.
21. » *flavidus* Bourg.
22. » *fuliginosus* Bourg.
23. » *hypocrita* Bourg.
24. *Metriorrhynchus Kirschi* C. Waterh. (*lineatus* Kirsch).
25. » *sericeus* C. Waterh.
26. » *atrofuscus* C. Waterh. (an *Cladophorus*?).
27. *Ditoneces rufobrunneus* Gorh.
28. *Melampyrus alternans* C. Waterh.
29. *Dihammatus pallens* C. Waterh.
30. *Plateros expletus* C. Waterh.
31. *Micronychus aemulus* C. Waterh. (an *Calochromus*?).
32. » *dispar* C. Waterh.
33. » *sericeus* Bourg.
34. *Calochromus melanurus* C. Waterh.
35. *Dilophotes exilis* C. Waterh.
36. » *pygmaeus* C. Waterh.

Notes from the Leyden Museum, Vol. XIV.

NOTE XII.

DEUX ESPÈCES NOUVELLES DE COLÉOPTÈRES DE
LA FAMILLE DES NITIDULIDAE

DÉCRITES PAR

A. GROUVELLE.*Carpophilus Bosschae*, n. sp.

Ovatus, vix convexus, nitidus, glaber, testaceo-piceus; clava antennarum infuscata; capite prothoraceque sat fortiter punctatis, margine antico prothoracis emarginato, postico utrinque sat profunde sinuato; angulis anticis productis, posticis acutis; elytris punctatis, apice oblique truncatis, versus suturam in longitudine impressis, humeris dentatis. — Long. 1 $\frac{1}{2}$ mill.

Ovale, faiblement convexe, glabre, brillant, testacé, plus ou moins enfumé sur la tête, le disque du prothorax et le pourtour des élytres. Base des antennes et pattes plus claires.

Ponctuation de la tête et du prothorax assez forte, un peu écartée, plus serrée vers les angles postérieurs du prothorax. Front convexe, angles postérieurs de la tête à peine marqués. Prothorax environ deux fois plus large que long, assez rétréci en avant; bords latéraux parallèles dans la moitié basilaire; marge antérieure largement échancrée, postérieure droite devant l'écusson, assez fortement échancrée de chaque côté; angles antérieurs saillants, un peu émoussés, postérieurs aigus; disque légèrement déprimé devant ces derniers; marges latérales et basilaires rebordées. Écusson subpentagonal, finement et très éparsement ponctué. Elytres

Notes from the Leyden Museum, Vol. XIV.

moins longs que larges ensemble, présentant leur plus grande largeur un peu avant la base, tronqués obliquement au sommet, laissant à découvert deux segments de l'abdomen; ponctués moins fortement que le prothorax, impressionnés contre la base de la suture. Angles huméraux dentés.

Hab. Bornéo occidental: Sambas (Dr. Bosscha). — Trois exemplaires dont un dans la collection du Musée de Leyde.

Parametopia Bosschae, n. sp.

Ovata, subconvexa, nitida, glabra, picea; antennis, pedibus et lateribus prothoracis elytrorumque dilutioribus, singulo elytro rufo bi-maculato; capite bi-impresso, lateribus prothoracis elytrorumque sat late explanatis. — Long. 3 mill.

Ovale, légèrement convexe, brillant, glabre, couleur de poix; marge antérieure de la tête, bords latéraux du prothorax et des élytres, antennes et pattes plus clairs. Sur chaque élytre deux taches rougeâtres; la première transversale, légèrement réniforme, sur la moitié basilaire; la deuxième, ovale, sur la seconde moitié.

Tête assez densément ponctuée, strie interantennaire effacée au milieu, prenant naissance de chaque côté dans une impression assez large, peu profonde. Ponctuation du prothorax assez dense, entremêlée de gros points sur les côtés; marges latérales explanées, un peu relevées. Ponctuation des élytres un peu plus forte que celle du prothorax surtout sur les côtés; rebords latéraux explanés, ponctués, séparés de la partie convexe des élytres vers la base par une strie ponctuée de gros points.

Voisin de *Parametopia* (*Prometopia*) *rotundata* Reitt. mais plus petit et moins foncé; 2^{me} tache plus apicale, et ponctuation des côtés du prothorax double.

Hab. Bornéo occidental: Sambas (Dr. Bosscha). — Un seul exemplaire dans la collection du Musée de Leyde.

Paris, Janvier 1892.

NOTE XIII.

CYCLOMMATUS SQUAMOSUS,
A NEW SPECIES OF LUCANID FROM BORNEO

DESCRIBED BY

C. RITSEMA Cz.

Years ago I received from his Excellency, the Ex-Governor General of Dutch India J. W. van Lansberge, a lot of beetles from Sintang (Borneo), containing a. o. a male *Cyclommatus* of minor development, which I believed to belong to an undescribed species. I abstained, however, from describing it for want of the major development, but gave it the provisory name of *squamosus*, making allusion to the large scales by which the insect is covered on its upper surface. Now, a few days ago, my friend Neervoort van de Poll handed to me for identification a male *Cyclommatus* of major development from Brunei (Borneo), captured by Mr. Waterstradt, and I was highly surprised to find that it belonged to the same, still undescribed species as my small male from Sintang. Under these circumstances I believe to be fully entitled to publish here a description of both specimens under the name of

Cyclommatus squamosus.

The species is allied to *Cyclommatus Dehaani* Westw. (*affinis* Parry) on account of its being covered with scales in connection with the slowly declivous, neither excavated nor perpendicularly truncated front portion of the head, and the want of the tooth on the outer upper margin of the mandibles at some distance from the tip, but it is at

Notes from the Leyden Museum, Vol. XIV.

once distinguished by the conspicuous larger size of the scales.

Length of the forma major (without mandibles) 26 mm., that of the mandibles 14 mm.; breadth at the shoulders of the elytra 9 mm., length of the elytra $14\frac{1}{2}$ mm. — Reddish brown with a strong bronze green hue; the outer upper margin of the mandibles, the teeth, the scape of the antennae and the thickened outer margin of the elytra blackish. — Covered with dirty white scales which are roundish on the mandibles, head, pronotum and lateral margins of the elytra, elongate ovate on the remaining portion of the latter and here thin and soft and considerably larger.

The mandibles are slightly curved and armed a little beyond the middle with an acute tooth; on the basal half of the space between this tooth and the base of the mandibles about five crenulations are present; the space between the ante-apical tooth (which is broad and obliquely truncate) and the tip is occupied on the right mandible by two, on the left one by about six sharply pointed teeth; the space between the ante-apical and the post-median tooth is without any tooth or crenulation. The mandibles are opaque in consequence of a very minute sculpturing which is intermixed with scale-bearing punctures; the apical portion, however, is glossy.

The head is opaque being very densely covered with minute granulations which are intermixed with scales; the cheeks are somewhat coarser; the upper side shows a large semilunar impression in front of which the head slopes slowly to the clypeus which is broad and has the middle portion of its front margin turned upwards and notched at the top.

The pronotum is opaque, subshining along the middle, covered with large and deep scale-bearing punctures; the front margin is deeply bisinuate and accompanied in the middle by a narrow groove which widens out towards the sides and which is narrowly interrupted by a shallow median groove.

Notes from the Leyden Museum, Vol. XIV.

The elytra are subshining and covered with very distinct punctures; the interspaces are very minutely sculptured except along the suture. Between the shoulders and the scutellum a very distinct transverse impression is present.

Under surface and legs densely covered with small roundish yellowish scales, on the sides of the head and of the metasternum, however, the scales are elongate. The prosternal process is conically porrected. The fore-tibiae are slightly curved and armed on the outside, a little beyond the middle, with a small spine.

As is already said this specimen originates from Brunei (Borneo) and makes part of the collection of Mr. Neervoort van de Poll.

Length of the forma minor (without mandibles) 20 mm., that of the mandibles 8 mm.; breadth at the shoulders of the elytra 7 mm., length of the elytra $11\frac{3}{4}$ mm. — In this specimen, which has a narrow shape, the scales are larger than in the forma major, especially on the head and pronotum, and they are less numerous on the under surface; the coloration is somewhat darker, the tarsi and antennae nearly black, the metallic hue on the pronotum and elytra somewhat coppery.

The mandibles, which are as long as the head and thorax taken together, are broad, not narrowed towards the tip, and enlarged at the base on the inner margin; these enlarged portions are narrowly and deeply notched, so as to form two cylindrical teeth on each mandible; between these basal teeth and the broad obliquely truncate ante-apical ones the inner margin is faintly undulate; the space between the ante-apical tooth and the tip is occupied by five distinct teeth.

The head is less distinctly impressed and its front portion more rapidly sloping to the clypeus; the front margin of the latter is regularly convex, and not turned upwards.

The groove which accompanies the front margin of the pronotum is less distinct and more widely interrupted in

the middle, but the shallow median groove is wanting.

The elytra are proportionately longer and their sides more parallel; the punctures with which they are covered are somewhat larger, but the minute sculpturing between them is wanting.

There are four distinct spines on the outside of the left fore-tibia, and three on that of the right one.

This specimen originates from Sintang (Borneo) and belongs to the collections of the Leyden Museum.

Leyden Museum, February 1892.

NOTE XIV.

DESCRIPTION DE DEUX NOUVELLES ESPÈCES DU
GENRE ONYCHOGYMNUS, QUEDENFELDT

PAR

W. ROELOFS.

Mr. Neervoort van de Poll possède deux nouvelles espèces de Curculionides voisins du genre *Diabathrarius* Schh. qui me paraissent, malgré quelques différences, peut-être génériques, pouvoir entrer dans le genre *Onychogymnus* Quedenf. ¹⁾.

La première de ces espèces, originaire de Madagascar, possède un rostre à peine plus étroit que la tête, droit, et aplati en avant, mais différent de celui de *Onychogymnus Mechowi*, par sa plus grande longueur qui dépasse sa largeur. L'écusson de la nouvelle espèce est plutôt brièvement ovale que rond, et les élytres n'ont point de tubercule huméral.

Je crois que ces légères différences ne justifient pas la

1) Dans la liste des genres qui, comme *Onychogymnus*, ne possèdent point de 4^e article aux tarses, et dont le 3^e article est arrondi, Mr. Quedensfeldt omet de mentionner le genre *Syarbis* Pascoe (Journal of Entom. II, 1865, p. 423). Ignorant dans le temps la publication de M. Pascoe, j'avais publié (Ann. Soc. Ent. Belge, Tome X, 1866, et Tome XI, 1867) quelques espèces d'Australie et créé pour eux le genre *Acroteriasus*; j'ai reconnu plus tard l'identité de mon genre avec celui de M. Pascoe. Le Professeur Lacordaire a fait quelques observations à propos de la publication de ma petite notice; elles ont été publiées à la même place dans les Annales Belges.

Depuis, j'ai eu connaissance d'un genre, également privé du 4^e article tarsal et dont le 3^e article est arrondi, c'est le genre *Acherus*, du groupe des *Oxyopisthen*; je l'ai publié récemment dans les Notes from the Leyden Museum, où se trouve décrit son espèce unique *A. nigricans* et sa variété à fémurs rouges. (Notes from the Leyden Museum, Vol. XIII (1891), p. 173 et suivantes, et Vol. XIV (1892), p. 37).

création d'un genre nouveau, les caractères génériques essentiels, comme la forme générale du rostre, des antennes, des scrobes, des yeux, du pronotum, et l'armature des pattes ainsi que la construction de l'abdomen étant les mêmes.

Onychogymnus ursulus, n. sp.

Long. 9 millim., rostr. excl. — D'une forme plus ovale et relativement plus large que *Diabathrarius apicalis* Schh., moins élargi aux épaules que *Onychogymnus Mechowi* Quedenf., d'un noir brunâtre, densément garni d'écailles piliformes brunes.

Rostre plan par devant, dénudé vers l'extrémité, rugueux, séparé de la tête par une faible dépression, pourvu au milieu d'une fine ligne peu marquée et élevée, et de carènes, également peu sensibles, sur les côtés; des poils brun-jaunâtres entourent la bouche, surtout en dessous. Antennes brun-rouges, articles du funicule garnis de poils brunâtres.

Tête aplatie sur le front, densément garnie d'écailles brunes.

Prothorax aussi long que large, bisinué à la base, presque droit sur les côtés en arrière, sa partie antérieure rétrécie et assez fortement séparée du reste; il porte une grosse ponctuation, peu serrée, irrégulière, et sur le disque une faible ligne médiane, imprimée, allant de la base jusqu'à la partie déclive du lobe antérieur; il est garni d'écailles brunes, un peu plus sombres devant l'écusson; des écailles brun-sombres dressées forment une touffe peu élevée vers les côtés du disque au bord de la partie rétrécie antérieure. Ecusson ovale, brun-pale.

Elytres ovales, isolément arrondies à leur base, épaules obliquement saillantes, le bout des élytres arrondi; elles sont un peu déhiscentes à l'extrémité de la suture et portent des stries, peu profondes, de points arrondis; leur garniture consiste en écailles piliformes brunes, plus ou

Notes from the Leyden Museum, Vol. XIV.

moins claires; la couleur claire forme un peu derrière le milieu une bande transversale, peu marquée, en forme d'arc. Les intervalles alternants des stries, surtout les 3^{es} et 5^{es}, sont un peu plus élevés et portent des touffes d'écailles redressées d'un brun foncé.

Dessous et pattes munis d'écailles brun-pales, les dernières en outre portent des poils, surtout sur les jambes et les tarses.

Deux individus de Madagascar. (Coll. Neerv. van de Poll).

La deuxième espèce que j'ai sous les yeux est représentée par un individu unique, originaire du Gabon.

Elle offre un caractère générique, assez important, établissant une différence aussi bien avec l'espèce précédente, qu'avec *Onychogymnus Mechowi*. L'extrémité de la jambe, chez ces deux insectes, étant armée d'un mucro aigu, au dessus duquel se trouve une petite pointe triangulaire, la première armature n'existe pas chez l'espèce actuelle, qui possède cependant, comme chez les deux autres insectes, la petite pointe située plus haut. L'extrémité de la jambe est ici tronquée et la corbeille est garnie au côté extérieur d'une petite rangée de poils noirs rigides, beaucoup moins développés aux jambes antérieures. J'ai cherché en vain d'autres caractères, qui pourraient forcer de séparer l'espèce génériquement des deux autres. Je la place par conséquent, du moins provisoirement et avec doute, dans le même genre.

Onychogymnus (?) *ocellatus*, n. sp.

Long. 12 millim., rostr. excl. — D'une forme plus allongée, surtout en ce qui concerne le prothorax, que les espèces précédentes et que *Diabathrarius apicalis* Schh.; garni d'écailles rondes d'un jaune d'ocre pale en dessous et sur les jambes, d'une couleur de foie un peu argentée au milieu du prothorax et sur les élytres, avec deux ocelles noires vers le bout de ces dernières.

Notes from the Leyden Museum, Vol. XIV.

Rostre aussi long que large, anguleusement aplati en avant et devant les yeux, muni d'une carène obsolète, garni comme la tête d'écailles jaune-ochracées; des poils brun-jaunes entourent les parties de la bouche, surtout en dessous.

Tête vaguement ponctuée, plane par devant, avec un gros point peu profond sur le front se perdant dans une dépression qui remonte sur le vertex. Scape et funicule des antennes brun-rouges, le bout du premier et le dernier portent des poils jaunes; massue gris-jaunâtre.

Prothorax aussi long que large, en forme de cône tronqué, bisinué à la base, ses angles postérieurs saillants et un peu relevés, muni d'une ligne courte mais profonde devant l'écusson, couvert d'une ponctuation vague, déprimé sur le disque en arrière; il est garni sur les côtés d'écailles jaune d'ocre, d'écailles noirâtres au milieu; des poils couchés, courts et noirs sont disséminés entre les écailles. Ecusson arrondi, jaune d'ocre.

Elytres à la base isolément arrondies, puis sinuées en dedans des épaules, ces dernières obliques; les côtés des élytres graduellement et faiblement rétrécies en arrière, leur extrémité arrondi; elles sont faiblement et un peu anguleusement calleuses vers le bout, déclives à la base, garnies de stries de points et présentent des rides transversales peu sensibles sur le dos. La coloration générale est couleur de foie, la couleur ochracée s'étend un peu sur les épaules et se voit sur l'extrémité des élytres; elle couvre également l'espace entre la gibbosité et la tache noire, veloutée, irrégulièrement arrondie, située un peu plus en avant; la couleur jaune borde cette tache sur le côté extérieur. Une tache claire, très petite, se montre sur le 5^e intervalle vers le milieu de l'élytre. Des poils couchés, courts et noirs, sont irrégulièrement disséminés entre les écailles.

Le dessous et les pattes sont garnies d'écailles jaune d'ocre pale. Le dessous est lisse, à l'exception de l'extrémité du dernier segment abdominal qui est ponctuée. Le

Notes from the Leyden Museum, Vol. XIV.

bord des élytres, qui est assez épais en arrière, est couvert d'une grosse ponctuation. Sur les pattes se voient des poils, plus abondants sur les jambes et le dessus des tarses; elles dépassent le bord du 3^e article. Les tibias sont rugueusement ponctuées. Les hanches antérieures présentent une touffe de poils jaunâtres.

Un individu du Gabon. (Coll. Neervoort van de Poll).

L'insecte que j'ai sous les yeux me paraît être du sexe mâle; le métasternum est déprimé en arrière; la dépression se continue sur le milieu des deux premiers segments de l'abdomen.

La Haye, Février 1892.

NOTE XV.

ON TWO GENERA DESCRIBED BY JAMES THOMSON
IN HIS "SYSTEMA CERAMBYCIDARUM"

BY

C. RITSEMA Cz.

To an interesting lot of Longicorn Beetles, communicated to me by Mr. René Oberthür, was joined the unique type-specimen of the genera *Hysterarthron* (*collare*) Thoms. and *Camira* (*sexmaculata*) Thoms., both described by the author as belonging to the family of the Cerambycidae¹).

I was astonished to find that the first did not at all belong to the named family, its anterior tarsus being composed of five joints²) (the middle legs are wanting). A further examination showed me that *Hysterarthron collare* Thoms. belongs to the family of the Lagriidae, and that it will find its place in the neighbourhood of the genera *Statira* Serv. and *Casonidea* Fairm.

The second genus (*Camira* Thoms.) cannot be maintained at all, its type-specimen being composed of the head and prothorax of a *Praonetha*-species, and the elytra with meso- and metathorax of a species of the genus *Perissus* Chevr. (*x-littera* Chevr., *femoralis* Chevr., *trizonatus* Boisd. or *glaucus* Boisd.).

Leyden Museum, February 1892.

1) Thomson, *Systema Cerambycidarum*, pp. 224 and 325. — Lacordaire, *Genera des Coléoptères*, IX, pp. 232 and 582.

2) In the „Atlas” belonging to Lacordaire’s „Genera” the artist has given four joints to all the tarsi! (Plate 95, fig. 5).

NOTE XVI.

ON TAENIODERA QUADRILINEATA AND SOME
ALLIED SPECIES

BY

OLIVER E. JANSON.

It has been long evident to me, that several distinct species have been confused under the name of *Macronota* or *Taeniodera quadrilineata*, but owing to the want of sufficient material, I have hitherto been unable to arrive at any satisfactory conclusion regarding them. Recently however, by the acquisition of Mr. F. Moore's collection of Cetoniidae, I have secured a good series of specimens from India, and by the courtesy of Mr. Ritsema I have obtained the loan of the various Javanese and Sumatran examples of this group contained in the collection of the Leyden Museum. These, together with other specimens to which I have had access, have enabled me to recognize both sexes of no less than four species, all of which closely resemble one another in general form and coloration, but present structural and other characters by which they may be readily separated.

The first of these species, *quadrilineata* Hope, was very briefly described in 1831 by that author in his Synopsis of Nepaul Insects [Gray's Zool. Misc. p. 24 ¹)] under

1) Schaum maintains (Ann. Soc. Ent. France, 1844, p. 367; 1849, p. 294) that these brief and useless descriptions of Hope's should be entirely ignored, but I consider where the types are accessible and their identity can be clearly established, the law of priority should be adhered to. The authors of the Munich Catalogue have adopted this course.

Notes from the Leyden Museum, Vol. XIV.

the name of » *Trichius*'' *quadrilineatus*. The original specimens from Major Hardwicke's collection are in the British Museum, and one of them, bearing Hope's label and evidently the specimen which served as his type, is an example of a common Indian species, in which the usual red ground color of the elytra is entirely replaced by black; this has enabled me to determine without doubt as to which species the name of *quadrilineata* should be applied.

The second species is the *quadrilineata* G. & P. (Mon. Cét. p. 321, t. 63, f. 5). Dr. Schaum appears to have first committed the error of regarding this species as identical with *quadrilineata* Hope, with which it has ever since been associated. It is evidently only by accident that Gory adopted the same name (which he ascribes to Drapiez) for his Javan species as had been used two years prior by Hope for the allied Indian species. As it is therefore necessary to rename Gory's species, I have followed the usual practice in such cases in proposing the name of *Goryi* for it.

The third species, *scenica* G. & P., was considered by Burmeister to be the male of *quadrilineata* G. & P., the similar habitat, resemblance in color and the fact that Gory's types of the two species chanced to be of opposite sexes, are no doubt the reasons that he was led into this error. I had long suspected that the dissimilarity in the clypeus was not merely a sexual character, but we are indebted to Mr. Ritsema for the first discovery and correction of this error (Notes Leyd. Mus. XII, p. 11).

The fourth species is apparently undescribed. I have therefore proposed a name and indicated wherein it differs from *quadrilineata*. I have possessed specimens for some years and have observed it in other collections under that name.

The following are the principal characters by which the four species may be distinguished, after which I have given further details of the points in which they differ, with particulars of their localities as far as they are known to

Notes from the Leyden Museum, Vol. XIV.

me. I may mention that besides the secondary sexual characters in the antennae, etc., the males of all the four species have the abdomen furrowed beneath.

1. Clypeus emarginate at the apex.

A. Antennae in the male very large,
the club nearly as long as the head.

a. Base of thorax moderately lobed,
scutellum with an impressed yellow median line *quadrilineata* Hope.

b. Base of thorax strongly lobed,
scutellum with yellow marginal
line. *scenica* G. & P.

B. Antennae in the male with the
club much shorter than the head . *virgata* Jans.

2. Clypeus broad and entire at the
apex *Goryi* Jans.

1. *T. quadrilineata* Hope.

This species has the clypeus emarginate at the apex, the club of the antennae very large in the male, the thorax is slightly narrowed at the base and but moderately lobed behind, the scutellum is slightly sulcate with an impressed and punctured yellow median line, the elytra have a strong longitudinal discal carina, the pygidium has only one central linear yellow spot, and the legs are always entirely black.

I have a specimen agreeing with Hope's type in having the ground color of the elytra entirely black, and have seen specimens intermediate between it and the ordinary form. I also have examples in which there are scarcely any indications of the usual black markings. It is represented in most collections and appears to be moderately common in the Himalayan region of India. I have specimens from Nepaul, Darjeeling and Assam. Mr. Doherty has recently taken it in some quantity in N. Manipur.

Notes from the Leyden Museum, Vol. XIV.

2. *T. Goryi* Jans.

(4-lineata G. & P., nec Hope).

This species may be at once distinguished from the other three by its broad, non-emarginate clypeus, the margins are also more reflexed and the punctuation is closer; both the head and thorax are usually red or piceous, and the latter has a distinct elevated median line; the scutellum is sparsely punctured and has no median line; the elytra are more coarsely punctured and have a more strongly raised discal carina than in *quadrilineata*; there is a large round central spot on the pygidium, and in the single male example I have seen, there is an additional small spot on each side as in *scenica*; the tibiae are red or piceous and in some specimens the legs are entirely red; the anterior tibia of the male has no indication of lateral teeth.

Appears to be rare in collections. I possess only two females from Java, the only male I have seen comes from the same Island, and has been kindly communicated to me by Mr. Ritsema, together with two examples of the other sex, one of them taken by Dr. B. Hagen at Tandjong Morawa, East Sumatra.

3. *T. scenica* G. & P.

This species differs from *quadrilineata* Hope in having a stronger longitudinal carina on the head, the thorax is more strongly lobed at the base, has a feeble but distinct longitudinal elevation in the centre, and in the male it is evidently broader at the base; the scutellum is flat, without a median line and is margined at the sides with yellow; the elytra are less sulcate at the suture and have a narrower discal carina; the pygidium is usually marked with three yellow spots and is often red at the apex; the underside is often red or yellow in the centre, and the legs almost invariably have the tibiae and tarsi red or piceous or are entirely red or yellow; the mesosternal process

Notes from the Leyden Museum, Vol. XIV.

is more compressed and forms an acute carina in front.

I possess both sexes from Batavia, and have examples before me, belonging to the Leyden Museum, likewise from West Java, and collected by Messrs. Blume, Muller, Piepers and Sijthoff. A very pretty pale variety with yellow legs has been sent by Mr. Doherty from Perak.

The black markings on the elytra are very variable in this as well as in the allied species, and are sometimes quite absent; it is this variety that has been described recently by Dr. Kraatz under the name of *rufipennis*, as has been already indicated by Mr. Ritsema. In the female of this species the yellow lines on the thorax are much broader than in the male.

4. *T. virgata*, n. sp.

Very similar to *quadrilineata* Hope but larger, head more coarsely and closely punctured, the median carina rather stronger, clypeus deeply emarginate, club of the antennae in the male about half the length of the head, much shorter in both sexes than in *quadrilineata*. Thorax regularly rounded at the sides and distinctly narrowed behind, the basal lobe short and broad, more closely punctured than in *quadrilineata*, the four longitudinal bands broader and more regular. Scutellum black, with a few coarse punctures and an impressed yellow median line. Elytra red with elongate black markings and small yellow spots, more produced and rounded at the apex than in *quadrilineata*, the black portion broader with the yellow spot linear, oblique and further from the apex than in that species. Pygidium coarsely rugulose, black with a narrow yellow central line. Underside and legs black or piceous with broad yellow markings, mesosternal process broader and more obtuse than in *quadrilineata*. — Length 18—19 mm.

India; Mungphu and Darjeeling. In my collection and the Indian Museum.

Notes from the Leyden Museum, Vol. XIV.

T. (Euselates) magna Thoms., from Cochin China, is only known to me by the very imperfect description; it would appear to be allied to *virgata* but to differ in the markings of the elytra and in having four spots on the pygidium; the form of the clypeus is not mentioned.

T. quadrivittata Schaum, from Ceylon, belongs to the same group as *quadrilineata*, but is very distinct and is too well-known to need description here.

London, February 1892.

NOTE XVII.

A NEW SPECIES OF THE STAPHYLINID GENUS
TRYGAEUS

DESCRIBED BY

D. SHARP.

Trygaeus javanicus, n. sp.

Niger, nitidus, convexus, antennarum apice ferrugineo, tarsis rufis; prothorace inaequali, dense fortiterque punctato; elytris profunde sulcatis, interstitiis convexis, parum latis. — Long. 6 millim.

Head with the upper surface somewhat uneven, rather closely and finely, but irregularly, punctate, scarcely shining. Antennae reaching backwards slightly beyond the base of the thorax; piceous-black, at the base with five joints free from sensitive pubescence and therefore somewhat shining; the joints from this to the extremity are somewhat broader, the penultimate joint being scarcely so long as broad, they are densely pubescent, and the terminal joint — as also the apex of that preceding it — is ferruginous. The thorax is strongly transverse, and very convex in the transverse direction; it is strongly narrowed in front, the sides are somewhat irregular in outline, and are a little rounded and very slightly contracted behind near the hind angles; the base is deeply sinuate on each side of the middle, and also less deeply emarginate in the middle in front of the scutellum; the surface is uneven, bearing several rather indefinite impressions, it is glabrous, and is rendered rough by a deep, coarse punctuation which is somewhat irregularly distributed, the punctures being in some places nearly confluent:

Notes from the Leyden Museum, Vol. XIV.

the lateral raised margin ceases entirely at about one-third of the length in front of the base. The scutellum is large and quite smooth and shining. The elytra are scarcely twice as long as the thorax; they are very deeply sulcate, the interstices being strongly elevated and rather narrow, the grooves are somewhat indistinctly crenate. The legs are piceous-black, the sulcation of the tibiae is very distinct.

One specimen found on Mount Poentjak in West Java by Mr. J. D. Pasteur, and belonging to the Leyden Museum.

This species is somewhat closely allied to *T. princeps* m. ¹⁾ but is narrower, and is more densely sculptured, has deeper sulci on the elytra, with narrower interstices; the outline of the prothorax is more irregular, and its sides are less explanate.

Although an insect of small size, the discovery of this species of *Trygaeus* in the island of Java is of considerable interest, as the genus is a very peculiar one, and hitherto has only been found in Japan, where it is represented by a single species. The idea seems to be prevalent in many minds that the insect-fauna of Japan is more similar to that of the Palaearctic region than to that of the Oriental region. I am myself inclined to think that this will not prove to be truly the case, and that when we know as much of the fauna of the east as we do of that of Europe, the insects of Japan will be found to belong in greater part to the former fauna.

Cambridge, 12th February 1892.

1) Trans. Ent. Soc. London, 1874, p. 420. — Ann. and Mag. of Nat. Hist. (6) III, 1889, p. 467. — Aid. Ident. Ins. Pl. 133, fig. 8.

NOTE XVIII.

ON A NEW SPECIES OF BATRACHOSTOMUS

BY

ERNST HARTERT.

When in February, on my return from London to Frankfurt, I visited the Leyden Museum, I had — through the liberality of the Director and the kindness of my friend J. Büttikofer — the opportunity of examining the collection of Cypselidae, Caprimulgidae and Podargidae in the Museum, and among them the unique specimen of *Caprimulgus binotatus*, Bp. Consp. I and Hartl. Orn. W. Afr., a most singular and distinct species, which has no near ally.

In a not yet revised lot of Podargidae I noticed a specimen of *Batrachostomus*, collected by Horner in the province of Padang in W. Sumatra in 1837. The label which is attached to the stand of the specimen bears the name of *Podargus poliolophus* Temm. n. sp. This name however seems to be unpublished, but the bird is totally different from all the species of the genus which have been described until now. I give the following description of it.

Batrachostomus poliolophus.

Female. Top of the head, back and rump bright cinnamon-rufous, a white collar formed by white bands across the feathers on the hind neck; scapulars with large white spots, encircled by a brownish black line; wing-coverts cinnamon-rufous with white tips; outer webs and tips of

Notes from the Leyden Museum, Vol. XIV.

inner webs of primaries pale cinnamon, inner webs dusky; secondaries similar in colour, innermost ones uniform cinnamon; rectrices cinnamon, lateral ones with distinct whitish spots to the tips; feathers of the lower parts pure white, dusky at lowest bases and margined with rufous, narrower on the feathers of the throat, much broader and darker on the breast; lower wing-coverts brown and white; elongated feathers and bristles of the ear-tufts and above the bill and on the chin extremely long, longest 1.5 inches in length. Total length nearly 9 inches, wing 5.3, tail 3.8, culmen 0.8, tarsus 0.55, width of gape 1.2.

Habitat. Padang, Sumatra (Leyden Museum).

The specimen is apparently in perfect plumage, only the somewhat fluffy under tail-coverts indicate that it is a younger specimen and, judging from analogies, the whitish tips to the rectrices are remains of immaturity.

This species has the long ear-tufts and tuft-bristles as *B. hodgsoni* from the Himalayas, but it is easily distinguished from it by the spotted wing-coverts, whiter lower parts and unbarred rectrices. It agrees with *B. stellatus* in the spotted wing-coverts, but it is distinguished from it by the white abdomen and unbarred tail as well as by the long tufts and tuft-bristles.

Frankfurt a/Main, February 1892.

NOTE XIX.

UEBER DIE ARTEN UND DEN SKELETTBAU
VON CULCITA

VON

Dr. CLEMENS HARTLAUB.

„The variability of the forms of the genus *Culcita* is obviously very great and a careful revision of the species with the aid of a large number of specimens is a pressing necessity”.

BELL, 1887. l. c.

(Tafel 1 und 2).

Das Genus *Culcita* Agass. zählt durch die merkwürdige Form und die ansehnliche Grösse seiner Arten zu den interessantesten Asteriden, und gut conservirte Exemplare davon gehören zu den Zierden unsrer Museen. Um so bedauerlicher erschien es mir, als ich vor einiger Zeit den Versuch machte die von Prof. Brock in Amboina und Pulo Edam (Java) gesammelten Stücke zu bestimmen, dass die Determination der Species, wollte man sich nicht mit blossen Muthmassungen begnügen, trotz der sehr geringen Zahl von Formen, fast zu den Unmöglichkeiten gehörte. Die Ursache hiervon war der fast gänzliche Mangel an Abbildungen und genügenden Beschreibungen. Die Müller-Troschel'schen Diagnosen von *C. novae guineae*, *grex* und *coriacea* waren, gegenüber der ungemeinen Variationsfähigkeit der Arten, ganz unzureichend geworden; ebenso ungenügend war Gray's Beschreibung von *C. pentangularis*, und die natürliche Folge davon wurde eine merkliche Unsicherheit bezüglich dieser Arten in der späteren Litteratur. Die einzigen sicher bestimmbaren Species waren die vortrefflich abgebildete *C. schmideliana* Retz. (Schmidel l. c.) von der africanischen Ostküste und *C. veneris* Perr. von St. Paul, die sehr abweichende Charaktere hat.

Um dem besagten Uebelstande abzuhelpen beschloss ich

Notes from the Leyden Museum, Vol. XIV.

die photographische Aufnahme, wenn möglich sämtlicher Typen, und zunächst einen Besuch im Leydener Museum, welches mehrere Müller-Troschel'sche Originale besitzt. Den Herren, welche mich dort liebenswürdiger Weise unterstützten, besonders Herrn Dr. Horst, meinen besten Dank! dem Director der Sammlung, Herrn Dr. Jentink, bin ich ausserdem für die Gewährung einer Doppeltafel sehr verpflichtet. Was ich im Leydener Museum feststellen konnte, möchte ich mir erlauben an dieser Stelle zu veröffentlichen, in der Hoffnung damit dem Bestimmer von *Culcita*-Arten die Arbeit bereits zu erleichtern und um Directoren von Museen anzuregen mich für die Fortsetzung meiner Studien mit Material, resp. durch Mittheilung von Fundorten zu unterstützen. Diese kleine Publication ist nur eine vorläufige und macht keinen Anspruch auf abschliessende Resultate; ihr wird, wie ich hoffe, eine zusammenfassende Darstellung mit der Reproduction des für die Arten und zahlreichen Variationen äusserst interessanten Photographieen Materials folgen. Ein ähnliche Bearbeitung habe ich auch für das artenreichere Genus *Pentaceros* begonnen, für welches sich der Mangel an Abbildungen nicht minder fühlbar macht. Im Anschluss an die Besprechung der Arten, möchte ich sodann einige Beobachtungen über das Skelett der Gattung bringen.

Es wird wenige Seesterne geben, die so ausserordentlich zu individueller Abänderung neigten, wie grade *Culcita*. Nehmen wir beispielsweise die bekannte *C. schmideliana* Retz., so wäre Nichts einfacher als zwei Exemplare von ihr herauszugreifen, die der Nichteingeweihte für verschiedene Species erklären würde. Ich erwähne nur das auf Taf. 97 der Encyclopédie méthodique abgebildete Exemplar, welches Müller und Troschel für *C. coriacea* M. T. hielten, während Perrier l. c. 1876 und früher schon Michelin ganz richtig seine Zugehörigkeit zu *C. schmideliana* bestätigten. Während der Besitz sehr grober dicker Rückentuberkel bei der Art normal ist, hat dieses Exemplar fast gar keine, ein kleiner Unterschied, der bei *Culcita* eben

Notes from the Leyden Museum, Vol. XIV.

keine Rolle spielt. Auch Folgendes diene als Beispiel: Bei dem von Schmidel abgebildeten Exemplare besitzt die Ventralseite gröbere Granula in kleinen Gruppen, die durch beträchtliche Zwischenräume getrennt sind und Feldern angehören, welche ihrer Lage nach den subcutanen Skelettplatten entsprechen. Ebenso verhält sich ein Zanzibar-Exemplar in Göttingen, bei welchem jedoch die Felderung ganz fehlt. Ein Exemplar von Mauritius jedoch, in unsrer Sammlung, zeigt Gruppen von etwa 15 gröberen Granula, und wenig fehlte, so wäre ein Verhalten erreicht, wie es für *C. novae guineae* M. T. charakteristisch oder doch sehr häufig ist, nämlich gleichmässige Vertheilung grober Granula über die ganze Bauchfläche mit gänzlich fehlenden oder sich berührenden Gruppen. In der That habe ich im Hamburger Museum ein sehr interessantes Stück gesehen, welches auf der Bauchseite dies letztere Verhalten hat, während seine Rückenseite die typischen Eigenschaften einer *C. schmideliana* besitzt. Leider war der Fundort als »Canton oder Africa'' bezeichnet. Welcher Art es angehörte, war durchaus nicht zu sagen, vielmehr schien es darauf hinzudeuten, dass die in ihren Typen so verschiedenen Species *C. schmideliana* und *C. novae guineae* nur locale Varietäten ein und derselben Art seien. Dass die gewöhnlich hochgewölbte letztere Art, freilich wohl in Folge schlechter Conservirung, selbst in Spiritusexemplaren gelegentlich die flache Scheibenform der ersteren haben kann, zeigt ein Hamburger Stück von Java, dass augenscheinlich seiner Form wegen als *C. discoidea* Agass. (= *C. schmideliana* Retz.) bestimmt war, während die Charaktere seiner dorsalen und ventralen Granulirung ganz die von *C. novae guineae* waren ¹⁾.

Man sieht, welche Schwierigkeiten die Gattung *Culcita*

1) Das bei Arten mit normal gruppenbildender Bauchgranulation durch Vergrößerung und gegenseitige Verschmelzung dieser Gruppen, eine vollkommen gleichmässig vertheilte Granulation vorkommen kann, beweist auch ein fälschlich als *C. coriacea* M. T. bestimmtes Exemplar von Mauritius im Berliner Museum, welches ich zu meiner neuen Art *C. plana* rechnen möchte. vergl. pag. 86.

dem Systematiker bereitet, und wie interessant sie durch ihre vielfachen Variationen ist. Wollte man den Versuch machen ganz zuverlässige Speciescharaktere für sie aufzufinden, so würde dies, wie ich glaube, in den meisten Fällen ein vergebliches Bemühen sein. Fast alle sind mehr oder weniger variabel. Besonders gilt das für die ventrale und dorsale Granulation, die als ein Hauptmerkmal in den Beschreibungen herangezogen wird. Für die ventrale Granulirung wurde bereits *C. schmideliana* als Beispiel angeführt. Ein andres bietet unsre neue *C. plana* die vielfach mit *C. novae guineae* M. T. verwechselt worden ist, weil ein Exemplar von ihr fälschlich als solche bestimmt, im Leydener Museum ausgestellt war (vergl. pag. 85). Bei dieser Species liegen zwischen der feinen Grundgranulation der Bauchseite meistens grössere, unbestimmt begrenzte Gruppen etwas gröberer Körner, ihrer Lage nach den äusserlich schwach angedeuteten Feldern der ventralen Skelettplatten entsprechend. Sowohl das Leydener Neu Guinea-Exemplar als eins von Amboina und eins von den Philippinen zeigen dies Verhalten, dagegen hat ein Stück von den Viti Inseln im Hamburger Museum derartige Gruppen nur in der oralen und ambulacralen Umgebung und zwar nur spärlich und kaum auffallend; ein grosser Theil der Bauchseite aber ist gleichmässig ganz fein granulirt und nähert sich damit dem für *C. grex* M. T. eigenthümlichen Verhalten. Eine nicht seltene Abänderung der ventralen Granulation scheint die zu sein, dass sie aus der gewöhnlichen stumpf abgerundeten Form in eine spitzdornige übergeht. Das zeigt unter andern die vortreffliche Schmidel'sche Abbildung von *C. schmideliana* Retz., wo die sehr groben ventralen Tuberkel in der oralen und ambulacralen Region entschieden dornartig sind; ebenso kann bei *C. novae guineae* die ihr eigenthümliche sehr grobe dichte perlartige Granulation dornförmig umgestaltet sein; eine ähnliche Umgestaltung beobachtete ich bei *C. arenosa* Perr. für die äussere Ambulacralbewaffnung, die bei einem Göttinger und Stuttgarter Exemplare von den Sandwich

Notes from the Leyden Museum, Vol. XIV.

Inseln aus einer Doppelreihe starker stumpfer Kegel besteht. Umgekehrt können aber die groben Granula auch die Form polygonaler Platten annehmen, so bei dem Pulo Edam-Exemplare in Göttingen, und einem ebenfalls Javanischen Stücke dieser Art in Hamburg. Dann kommt es bei *C. novae guineae* sogar zu einer gewissen Gruppenständigkeit der groben Granula, so dass die Ventralseite ein von dem typischen sehr verschiedenes Aussehen bekommt.

Für die dorsale Granulation gilt eine nicht minder grosse Variationsfähigkeit. Erwähnt wurde, dass die sehr groben, zwischen den Porenfeldern stehenden, kegelförmigen Rückentuberkel von *C. schmideliana* manchmal in ziemlicher Menge auftreten, manchmal dagegen gänzlich fehlen. Aehnlich variirt die Rückenseite von *C. novae guineae*; bei dieser durch ihre meistens hochgewölbten Form kenntlichen Art, ist die grobe Tuberculirung des Rückens viel schwächer als bei jener Species und dabei meistens differenzirt in feinere Dornen, welche auf den Porenfeldern stehen und in gröbere, die auf die Zwischenräume vertheilt sind. Bei dem Göttinger Exemplare von Pulo Edam und einem von Prof. Hubrecht bei Padang gesammelten fehlen jedoch die kleineren Dornen gänzlich. Andererseits kommen Individuen vor, die durch ganz besonderen Reichthum und durch gleichmässiger Grösse und Vertheilung der Dornen sich auszeichnen, wie z. B. ein Stück der Bremer Sammlung aus dem »Indischen Meere« und eins von den Viti Inseln im Hamburger Museum, bei denen dichte Vertheilung und Stärke der dorsalen Dornen sehr bedeutend sind, und wo namentlich die gewöhnlich spärlicher und schwächer tuberculirten Seitenflächen sowohl auf den Porenfeldern als auf ihren Zwischenräumen von spitzen Dornen der grössten Sorte dicht übersät sind, die ohne Unterbrechung allmählig in die grobe Granulirung der Bauchfläche übergehen.

Nicht minder schwankend sind die Verhältnisse der dorsalen Porenfelder. Bei *Culcita veneris* Perr. und wahrscheinlich auch *C. coriacea* M. T. sind die Poren

Notes from the Leyden Museum, Vol. XIV.

gleichmässig über die ganze Rückenfläche vertheilt, bei den übrigen Arten liegen sie in mehr oder minder rosettenständigen Feldern angeordnet. Bei letzteren sind die individuellen Abstufungen in der Grösse und Form dieser Felder und in dem Grade, bis zu welchem diese untereinander verschmelzen können, sehr mannigfach. Das Original Exemplar von *C. novae guineae* z. B. besitzt grosse, dreieckige, dicht in Rosetten zusammengruppirte, nur an wenigen Stellen verschmolzene Porenfelder. Ihm gleicht darin ein Exemplar von Amboina in Göttingen; dagegen hat eins von Pulo Edam rundliche, viel weitläufiger stehende Porenfelder; bei dem Hubrecht'schen von Padang sind sie ausserdem viel kleiner und bei dem Stücke der Bremer Sammlung aus dem Ind. Ocean sind sie an vielen Stellen miteinander verschmolzen. Keines dieser Exemplare gleicht dem andern, und rechnet man nun die ebenso variable Tuberculirung des Rückens hinzu, so kann man sich von dem verschiedenartigen Totaleindrucke aller dieser Individuen einen Begriff machen. Auch in ihrem Verhalten auf den Seitenflächen ändern die Porenfelder bedeutend ab. Bei manchen der *C. novae guineae* Exemplare greifen sie fast auf die Bauchfläche über, bei andern dagegen, z. B. dem von Padang, befindet sich zwischen Bauchfläche und der unteren Grenze der Porenfelder ein 10 mm. breiter Zwischenraum von feiner Granulirung, mit einzelnen zerstreut stehenden sehr groben Dornen.

Nicht besser fährt man, wollte man etwa auf die Eigenschaften der Ambulacralbewaffnung besonderes Gewicht legen. Die Inneren Furchenpapillen, die in Gruppen von durchschnittlich etwa fünfem stehen, sind bei ein und derselben Art bald fein stäbchenförmig, bald mehr grob keulenförmig, bald gleich von Länge, bald ungleich. Sichere Speciescharactere bieten sie kaum; nur die merkwürdige *C. veneris* soll Gruppen von zwei, höchstens drei inneren Furchenpapillen besitzen, was, wenn constant, allerdings eigenartig wäre. Dass die Stäbchen einer Gruppe auf der der Rinnenwand zugewendeten Fläche, bis auf

Notes from the Leyden Museum, Vol. XIV.

ihr distales Ende häutig mit einander verbunden sind, scheint eine ziemlich allgemeine Eigenschaft zu sein; auch ist der untere Theil dieser Fläche an die Rinnenwand selbst angewachsen, wie ich mich an dem Exemplar von *C. grex* M. T. (Moluccen) im Leydener Museum und bei *C. novae guineae* überzeugte.

Mehr noch als die inneren variiren die äussern Furchenpapillen. Ein gutes Beispiel hierfür ist ein Exemplar von *C. plana* Nob., das Prof. Semper auf den Philippinen sammelte. Bei ihm ist die Bewaffnung mehr oder minder triplacanthid, und zwar besteht die mittlere Reihe aus ganz ähnlichen Papillengruppen wie die innerste, während bei andern Exemplaren der Species eine derartige Aehnlichkeit fehlt. Ein andres Beispiel bietet, wie schon erwähnt wurde, *C. arenosa*. Wie bei ihr können auch bei *C. schmideliana* die äusseren Furchenpapillen dornartig werden, was die erwähnte Abbildung des in dieser Hinsicht ganz abweichenden Schmidel'schen Originals zeigt. Sehr vielfältig ist auch bei *C. novae guineae* die äussere Bewaffnung. An dem Göttinger Exemplare von Pulo Edam würde man die »Reihe dickerer Papillen, von denen je zwei auf eine Platte kommen« (M. T. l. c.) vergeblich suchen. Hier haben sie durchaus den tafelartigen Charakter der übrigen ventralen Granula, vor denen sie in keiner Weise ausgezeichnet sind. Ebenso wenig sind die äusseren Furchenpapillen des Hubrecht'schen Exemplares von Padang im Vergleich mit der groben Granulirung der Ventralplatten irgendwie differenzirt.

Trägerisch als Kennzeichen ist auch der Besitz oder Mangel von ventralen mehr oder minder scharf begrenzten sechseckigen Feldern, die ihrer Lage nach den subcutanen Skelettplatten entsprechen. Bei *C. schmideliana* z. B., wo derartige Felder die Regel sind, können sie auch gänzlich fehlen. Für *C. novae guineae* ist im Gegentheile der Mangel von Felderung typisch, doch hat das Hubrecht'sche Exemplar solche stellenweise entwickelt und die ganze Bauchseite mit Reihen von seitlich scharf begrenzten

Notes from the Leyden Museum, Vol. XIV.

Feldern bedeckt, die nur einer Abtrennung durch Quersfurchen ermangeln. Ein mittelgrosses Exemplar von *Pulo Edam* in Göttingen, hat sogar die ausgeprägteste Felderung, die ich je bei einer *Culcita* gesehen habe. Bei ihr sind nämlich die mit platter, polygonaler grober Granulation dicht bedekten, sanftgewölbten, scharfumgrenzten Felder durch etwa 1 mm. breite Züge einer ebenfalls groben Granulation getrennt, wodurch die ganze Bauchseite sehr schön gemustert erscheint (vergl. pag. 83).

Bell giebt für seine *C. acutispinosa* als Hauptmerkmal an, dass die Enden der Ambulacralrinnen sich bei ihr unter dem Niveau der dorsalen oder abactinalen Fläche befänden. Doch auch dies Kennzeichen dürfte schwerlich zuverlässig sein, denn zwei Exemplare von *C. novae guineae* in unserem Museum zeigen das gleiche Verhalten, in sofern man bei einer Betrachtung von der Rückenseite die Enden der Rinnen nicht wahrnimmt. Auch sind die fünf Rinnen des einen Stückes von ziemlich ungleicher Länge. Auch hat BELL 1887 l. c. eine *C. schmideliana* von den Andamanen beschrieben, bei welcher »the apices of the ambulacra just touch the equator, so that R is almost exactly equal to r''.

Für alle eben besprochenen Eigenschaften lassen sich in der Mehrzahl der Fälle wohl gewisse Regeln aufstellen, aber kein beständiges Verhalten nennen. — Das beste Criterium dürfte noch die allgemeine Körperform abgeben, welche zum grossen Theile abhängt von der Festigkeit des Skelettes und dem Gehalt des Integumentes an kalkigen Bestandtheilen. Ganz weich ist, wie bereits erwähnt wurde, *C. veneris* Perr. von St. Paul; ihr am nächsten dürfte *C. grex* stehen, die sich ebenfalls ziemlich weich anfühlt, und deren Haut mit einer so feinen Granulation bedeckt ist, dass man sie wenigstens auf der Rückenseite nicht mehr mit blossen Auge erkennen kann (s. Taf.). Letztere Art wird sich wohl in ihrer Form ähnlich verhalten wie *C. veneris* Perr., von welcher der Autor 15 mm. Dicke angiebt, »lorsque l'animal a expulsé l'eau, qui

Notes from the Leyden Museum, Vol. XIV.

remplit habituellement sa cavité générale, mais pouvant passer à une forme presque sphérique lorsqu'au contraire la cavité générale est gonflé par l'eau de mer ce qui est le cas le plus habituel." Einen Gegensatz zu derartigen Formen bildet *C. novae guineae*, deren hochgewölbte Körper an allen gut conservirten Stücken, die ich sah, von durchaus starrer Form waren, und deren festes Skelett dann ein Zusammendrücken des Körpers wenig oder garnicht zuliess. Flache Körperform besitzt *C. arenosa* Perr., ferner *C. plana* Nob., *C. acutispinosa* Bell., und in der Regel auch *C. schmideliana*, wenigstens habe ich keine gewölbten Exemplare von ihr gesehen. — Für *C. novae guineae* scheinen auch Convexität der Körperseiten und abgerundete Ecken charakteristisch zu sein.

Ich möchte nun die einzelnen Formen, soweit sie durch eigne Anschauung zu meiner Kenntniss gelangt sind, besprechen und vor Allem die M. T. Originale des Leydener Museums näher beschreiben. Was *C. arenosa* Perr. betrifft, bin ich in der Lage auf einen Irrthum aufmerksam machen zu können, den nach eignen brieflichen Zugeständniss des Autors die Original Beschreibung enthält. Schliesslich möchte ich das Skelett der Gattung kurz erörtern, von dessen Verhalten die Viguierschen Beschreibungen und Figuren (l. c.) leicht eine falsche Vorstellung erwecken könnten.

Ich schicke der Beschreibung der einzelnen Arten eine Uebersicht derselben voran, so gut sie sich augenblicklich geben lässt. Eine genauere Kenntniss der in England befindlichen Originale von *C. pentangularis* Gray und *C. acutispinosa* Bell fehlt mir zur Zeit noch und dürfte vielleicht spätere Aenderungen nothwendig machen. Weder die eine noch die andre Art scheint mir berechtigt zu sein.

UEBERSICHT DER CULCITA-ARTEN.

- A. Körper weich, sämmtliche äussere kalkige Ornamente, incl. Ambulacralbewaffnung, von Haut bekleidet. . . . 1) *C. veneris* Perr.

Notes from the Leyden Museum, Vol. XIV.

B. Aeussere kalkige Ornamente
nackt.

I. Keine Porenfelder. Bauch-

seite grob granulirt. . . 2) *C. coriacea* M. T.

II. Poren stehen in Feldern.

1) Körper meist hart und
hoch gewölbt, von etwas
abgerundetem Umriss.

Bauchseite grob granulirt 3) *C. novae guineae* M. T.

2) Körper gewölbt, ziemlich
weich, überall äusserst
fein granulirt . . . 4) *C. grex* M. T.

3) Körper scheibenförmig.

a) Ende der Amb. Rinne
nicht auf die dorsale
Fläche übergreifend.
Bauchfläche grob gra-
nulirt . . . 5) *C. acutispinosa* Bell.

b) Enden der Amb. Rinne
greifen auf den Rücken
über.

α) dorsale Tuberkeln in
form kleiner Dornen.

1) ohne ventrale
Gruppen gröberer
Granula . . . 6) *C. arenosa* Perr.

2) mit Gruppen grö-
berer Granula auf
der Bauchseite.

Gruppen inner-
halb scharf contu-
rirter sechsecki-
ger Felder. . . 7) *C. pentangularis* Gray.

Gruppen nicht in-
nerhalb scharf be-

grenzter Felder . 8) *C. plana*, n. sp.

β) dorsale Tuberkeln in

Notes from the Leyden Museum, Vol. XIV.

Form plumper gro-
ber Kegel, die vor-
wiegend auf den po-
renfreien Räumen
stehen. Grobe ven-
trale Granula in
Gruppen . . . 9) *C. schmideliana* Retz.

UEBERSICHT UEBER DIE GEOGRAPHISCHE VERBREITUNG.

Indischer Ocean: *C. schmideliana*, *C. coriacea*, *C. pentan-*
gularis, *C. veneris*. *C. novae guineae*?

Indischer Archipel: *C. novae guineae*, *C. grex*, *C. arenosa*,
C. plana.

Stiller Ocean: *C. novae guineae*, *C. pentangularis*, *C.*
arenosa, *C. acutispinosa*, *C. plana*, *C. schmideliana*??

<i>C. schmidel.</i>	<i>C. coriacea.</i>	<i>C. veneris.</i>	<i>C. pentang.</i>	<i>C. plana.</i>
Ind. Oc.	Ind. Oc.	Ind. Oc.	Ind. Oc. Pac. Oc.	Ind. Oc. Pac. Oc.
<i>C. nov. guineae.</i>	<i>C. grex.</i>	<i>C. arenosa.</i>	<i>C. acutisp.</i>	
Ind. Arch. Pac. Oc.	Ind. Arch.	Ind. Arch. Pac. Oc.	Pac. Oc.	

Fundorte der einzelnen Arten:

C. schmideliana Retz.: Zanzibar, Moçambique, Madagas-
car (Paris), Mauritius, Ceylon, Andamanen, Java?, Tro-
pisches Australien (fide Bell ¹⁾), Galapagos??

C. coriacea M. T.: Rothes Meer, Moçambique (fide Pe-
ters, v. Martens).

C. veneris Perr.: St. Paul.

C. pentangularis Gray: Moçambique (fide Perrier, im Mus.
Cambridge Mass.), Torres Str. (Typus), Viti Inseln (fide
Perrier, Mus. Paris).

C. plana Nob.: Mauritius, Amboina, Philippinen, Neu
Guinea, Viti, Samoa.

C. novae guineae M. T.: Mascarenen (fide Perrier), Pa-
dang, Java, Pulo Edam, Amboina, Neu Guinea, Neu
Hannover, Marshall Ins., Viti Inseln.

1) Bell, 1884, l. c. p. 173.

C. grex M. T.: Moluccen, Andamanen? (fide Bell l. c. 1887).

C. arenosa Perr.: Amboina, Ceram Laut, Sandwich Inseln (Typus).

C. acutispinosa Bell: Neue Hebriden.

Das Vorkommen von *C. schmideliana* auf Java und im Pacif. Ocean kann ich einstweilen nicht für sicher halten, da wenigstens die von mir gesehenen und so bestimmten Exemplare von Java sich bei näherer Betrachtung als *C. novae guineae* erwiesen (vergl. pag. 67). Nach Gray¹⁾ soll die Art sogar durch den ganzen Stillen Ocean bis zu den Galapagos (Lord Hoods Island) verbreitet sein, was jedoch Sladen als »perhaps doubtful« bezeichnet.

Sehr weite Verbreitung hat *C. novae guineae*, namentlich, wenn es sich bewahrheiten sollte, dass diese Species mit *C. pentangularis* identisch ist (Sladen, Chall. Rep. p. 352). Ihr Gebiet würde dann von den Viti Inseln bis Moçambique reichen.

Dass die bisher nur von den Sandwich Inseln bekannte Art *C. arenosa* Perr. sich in das Gebiet des Indischen Archipels erstreckt, ist von Interesse.

Unsre neue Art *C. plana*, die zweifelsohne von *C. novae guineae* streng zu unterscheiden ist, theilt nichtsdestoweniger deren Verbreitungsgebiet. Ein als *C. coriacea* M. T. bestimmtes von de Robillard gesammeltes Mauritius-Exemplar in Berlin ist zu dieser Art zu rechnen.

Sehr selten und beschränkt in ihrem Vorkommen ist, wie es scheint, *C. grex* M. T. Ausser den Leydener Exemplaren sollen nach Perrier drei trockne Exemplare im Pariser Museum sein, deren Fundorte jedoch nicht feststehen.

Da sich manche Arten in ihrer Verbreitung durchaus nicht ausschliessen, so geben die Fundorte einen nur sehr unsicheren Anhaltspunct für die Bestimmung. Auf Amboina allein kommen z. B. 3 Arten vor.

1) Gray, Synopsis, 1867, p. 5.

SYNONYME.

C. discoidea (Lam.) Agass. = *C. schmideliana* Retz.

C. pulverulenta (Val. M. S.) Perr. = *C. novae guineae* M. T.
(fide Perrier).

Randasia spinulosa Gray = *C. coriacea* M. T.

Randasia granulata Gray = *C. pentangularis* Gray.

Randasia luzonica Gray = ?

Perrier hielt *Randasia spinulosa* für ein junges Exemplar von *C. grex* M. T., doch zeigt sie mit dieser keine Aehnlichkeit. Uebrigens wies auch Perrier schon auf die Möglichkeit einer Beziehung zu *C. coriacea* hin.

C. novae guineae M. T. 1842, l. c.

Original Beschreibung: »Körper fünfeckig, selten sechseckig. Gestalt und Verhältnisse wie beim vorigen (*C. coriacea*). Furchenpapillen gross, vorstehend, fünf auf jeder Platte, eine etwas schräge Reihe bildend, die mittlere etwas höher. Dicht neben diesen Furchenpapillen eine Reihe kürzerer, dickerer, von denen je zwei auf eine Platte kommen. Grössere niedrige Knötchen auf der Bauchseite zwischen der feineren Granulation stehen dicht, werden jedoch an den Seiten des Körpers seltener und höher. Mitten auf den Seitenflächen beginnen plötzlich sehr grosse Porenfelder mit vielen Poren und kleinen stachelartigen Tuberkeln. Auf den Räumen zwischen den Porenfeldern stehen einzelne etwas grössere stachelartige Granula zerstreut. Porenfelder wie Zwischenräume überall granulirt. Pedicellarien sind nicht beobachtet.

Grösse bis 10 Zoll.

Fundort: Neu Guinea. Im Museum zu Leyden durch Salomon Müller.»

Unser Göttinger Museum besitzt ein Exemplar von Amboina, 1864 durch Bleeker gesammelt, welches als *C. novae guineae* M. T. bestimmt war. Wie ich jedoch dasselbe mit der Beschreibung sorgfältig verglich, fiel mir auf, dass es in Reihen stehende Gruppen gröberer Granula auf der Bauchseite besass, und dass seine Porenfelder nicht gross, sondern im Gegentheil relativ klein waren. Als ich kurze Zeit darauf nach Hamburg kam, fand ich ein ganz ähnliches Stück von Samoa mit derselben Be-

Notes from the Leyden Museum, Vol. XIV.

stimmung, und als ich später Leyden besuchte, fand ich auch hier ein von Neu Guinea stammendes durch Salomon Müller gesammeltes und in Spiritus vortrefflich conservirtes Exemplar, welches als *C. novae guineae* M. T. bezeichnet war und den beiden Stücken des Göttinger und Hamburger Museums vollkommen glich; offenbar hatte es für die Bestimmung dieser als Vorbild gedient. Da es aber, wie sich bald heraus stellte, augenscheinlich nicht das Exemplar ist, welches den Autoren der Species zum Typus diente, sondern vielmehr zweifelsohne einer andern Art angehört, so fragt es sich, ob von Seiten späterer Autoren das erwähnte Spiritus Exemplar in Leyden als Typus aufgefasst würde oder aber das richtige Original Stück, welches trocken conservirt und in einem Auszuge aufbewahrt gewesen ist. Ich möchte auf Grund des Hamburger und Göttinger Stückes das erstere für wahrscheinlicher halten. Dann würde es mir erklärlich sein, warum Sladen in seinem Challenger Report sagt, er sei nach sorgfältiger Prüfung nicht im Stande *Culcita pentangularis* Gray von *C. novae guineae* zu unterscheiden. Mir scheint in der That auch das fälschlich als *C. novae guineae* bestimmte Spiritus Exemplar in Leyden grosse Aehnlichkeit mit der Gray'schen Species zu haben, obwohl ihr die bei letzterer vorhandene sechseckige Felderung fehlt, doch wage ich ohne den Gray'schen Typus gesehen zu haben nicht den Pseudo-typus von *C. novae guineae* mit ihr zu identificiren; ich ziehe es vor letztere Art auf die Gefahr hin sie später wieder einziehen zu müssen, unter neuem Namen zu beschreiben. Leider ist in der spärlichen Literatur über die Gattung ein sicheres Urtheil über die von einem Autor besprochene Art in den seltensten Fällen zu gewinnen, wenn man von der einzigen durch gute Abbildungen bekannt gewordenen *C. schmideliana* absieht. Ganz unsicher scheint z. B. Perrier gewesen zu sein. Der Mangel von Abbildungen macht sich ausserordentlich fühlbar. Die Bestimmungen scheinen überall auf gut Glück und nach den Fundorten gemacht zu sein, jedoch selten

Notes from the Leyden Museum, Vol. XIV.

auf Kenntniss der Originale oder auf Grund guter Beschreibungen. Letztere fehlten eben bislang gänzlich.

Die Gründe, die mich bewegen, das trockne *C. novae guineae* Exemplar als allein gültigen Typus der Art anzusprechen, sind folgende: das Spiritus Exemplar hat einen Durchmesser von 117 mm., ist also um Vieles kleiner als die von den Autoren angegebene Maximalgrösse; es ist ferner kaum anzunehmen, dass die Autoren die Gruppenständigkeit der gröberen Granula auf der Bauchseite sowie die besondere Kleinheit der dorsalen Porenfelder nicht von ihm erwähnt haben sollten; es ist schliesslich sehr wahrscheinlich, dass die Autoren die von Salomon Müller in Spiritus conservirten Stücke nicht gesehen haben, weil sie sonst den Fundort von *C. grex* M. T. nicht als unbekannt angegeben haben würden, denn das Leydener Museum besitzt ein von diesem Reisenden gesammeltes ausgezeichnetes Exemplar dieser Art von den Moluccen, in Spiritus conservirt. Das trockne Exemplar von *C. novae guineae*, welches in seinem Habitus mit dem in Spiritus gar keine Aehnlichkeit hat, misst im Durchmesser 158 mm. ($R + r$), ist also, zwar grösser wie jenes, doch auch viel kleiner als 10 Zoll. Dennoch müssen wir allein dieses als Original auffassen, denn nur so finden die Worte der Autoren eine Erklärung, wenn sie die Porenfelder »sehr gross« nennen, und wenn sie von der ventralen Granulierung sagen »grössere niedrige Knötchen auf der Bauchseite zwischen der feineren Granulation stehen sehr dicht.« Einige Stellen freilich bleiben dennoch dunkel in ihrer Beschreibung: die Worte »selten sechseckig« passen weder auf das eine noch auf das andre Exemplar. Dies und die Grössenangabe beruhen vielleicht auf mündlichen Aussagen des Reisenden. Viel unerklärlicher ist, dass es von der Gestalt heisst »wie beim vorigen.« Die hier gemeinte *C. coriacea* ist nach einem allerdings ausgetrockneten Originale des Berliner Museums und andern Exemplaren zu urtheilen, ganz flach, während der Typus von *C. novae guineae* entschieden gewölbt ist, doch ist vielleicht in Betracht zu

Notes from the Leyden Museum, Vol. XIV.

ziehen, dass es auch in der Beschreibung von *C. coriacea* »Gestalt und Verhältnisse der vorigen" heisst, und dass hier *C. discoidea* Agass. gemeint ist, von welcher das Leydener Museum ein Original Exemplar von ganz ungewöhnlich hoher Form besitzt. Dieser Art können allerdings schlechter conservirte, gequetschte Stücke von *C. novae guineae* in der Gestalt so ähnlich sehen, dass wie erwähnt wurde, ein Hamburger von Java stammendes Stück offenbar nur seiner Form wegen als *C. discoidea* Agass. bestimmt war. (vergl. pag. 67).

Eine eingehende Beschreibung des von mir als Typus der Art aufgefassten Exemplares anzufertigen ermangelte mir leider bei meinem Leydener Aufenthalte die Zeit. Ich musste mich darauf beschränken dasselbe von der Bauch und Rückenseite zu photographiren und möchte nach den so erhaltenen Bildern und nach etwa einem Dutzend Exemplaren, die ich genau untersuchte, folgendes zur näheren Kenntniss der Species anführen.

Diagnose.

Gestalt hoch gewölbt, mit convexen Seiten und abgerundeten Ecken. Porenfelder des Rückens rosettenständig, oft gross und polygonal, seltener mittelgross und dann weitläufiger stehend und abgerundet; an den Seiten sehr gross und meist bis an die Ventralkante reichend. Rücken und Seiten bedornt. Dornen der Porenfelder feiner oder fehlend. Bauchseite von einer sehr groben, dichtstehenden, selten gruppenständigen Granulation bedeckt, deren Charakter von einem polygonalplattenförmigen bis zu einem dornförmigen variirt. Dazwischen eine feine Grundgranulirung. Innere Furchenpapillen kräftig, in Gruppen von 3—6, meist 5. Aeussere Bewaffnung, wenn deutlich differenzirt, eine einfache oder Doppelreihe grober, manchmal dornförmiger Tuberkel. Kleine Pedicellarien auf den Porenfeldern und der Ventralseite. Madreporenplatte nicht sehr gross, oft von einem Dornenkranze umgeben.

Färbung in Spiritus: meist hell grau gelb, seltener hell bräunlich oder weiss.

Notes from the Leyden Museum, Vol. XIV.

Grösse: bis 151 mm. Dm. ($R + r$).

Fundorte: Viti, Marshall Inseln, Neu Guinea, Neu Hannover, Amboina, Java, W. Küste v. Sumatra (Padang). Mascarenen?

Ich kann in Anschluss an die Diagnose nur empfehlen der weitgehenden Variation der Culciten bei der Bestimmung Rechnung zu tragen. Die geringe von mir gesehene Anzahl von Exemplaren beweist dieselbe in hohem Maasse. Ich kann unter diesem Materiale drei Varietäten unterscheiden:

Die erste ist die Ausbildungsform des trocknen M. T. Exemplares in Leyden, welcher ein von J. Brock auf Amboina gesammeltes schön erhaltenes Spiritus Exemplar unserer Sammlung vollkommen gleicht. Ihnen eigenthümlich sind in der Regel grosse drei, bis sechseckige Porenfelder, die durch schmale, ein Netzwerk bildende, porenfreie Züge getrennt und um grössere porenfreie Stellen rosettenartig gruppirt sind. Auf diesen porenfreien Räumen stehen in kleinen oder mässigen Zwischenräumen ziemlich kräftige Dornen, die aber höchstens ein Drittel so stark sind wie die dicken Rückendornen von *C. schmideliana* Retz. Auf den Porenfeldern stehen in ziemlich der selben Dichtigkeit bedeutend feinere Dornen, die jedoch aus der Granulation derselben deutlich hervorragen. Die ventrale Fläche ist ausser ihrer feinen Grundgranulirung mit einer dichtstehenden sehr groben rundlichen Granulation bedeckt, die keine deutliche Gruppenständigkeit oder gar Felderung zeigt.

Die zweite Varietät ist durch eine besonders dichte Bedornung ausgezeichnet, die namentlich auf den Seiten des Körpers sehr kräftig wird und hier ohne Unterbrechung in die grobe Granulirung der Bauchseite übergeht. Die Tendenz zur Dornenbildung ist so gross, dass an dem Hamburger Exemplar von den Viti Inseln sogar die ganze grobe Ventralgranulation dornigen Charakter hat, incl. der äusseren Ambulacralbewaffnung. Für die Bedornung

Notes from the Leyden Museum, Vol. XIV.

des Rückens und der Seiten ist sodann eigenthümlich, dass der Grössenunterschied zwischen den Dornen der Porenfelder und denen der Zwischenräume sehr gering ist, und dass namentlich die grossen Porenfelder der Seitenflächen starke Dornen tragen. Die Porenfelder sind weniger gross als bei der ersten Varietät und neigen sehr zur Verschmelzung. Die grobe Granulirung der Bauchseite ist gleichmässig, aber manchmal weniger dicht vertheilt, ohne Andeutung von Gruppenbildung oder von Zügen. Von dieser Varietät sah ich ausser dem Hamburger Exemplare nur eins im Bremer Museum aus dem »Mare indicum.« Beide Stücke zeigen ziemlich zahlreiche kleine Klappen pedicellarien.

Für einen dritten von den beiden bis jetzt beschriebenen ziemlich verschiedenen Habitus sind als Beispiele ein Exemplar von Pulo Edam (Java) und das Hubrecht'sche von Padang zu nennen, beide in Alcohol tadellos erhalten. Ihnen ist eigenthümlich eine spärlichere, aber kräftigere Bedornung des Rückens und der Seiten, die fast ausschliesslich auf die porenfreien Räume beschränkt ist. Die feinere Bedornung der Porenfelder fehlt fast ganz. Die Porenfelder sind von mässiger Grösse und mehr abgerundet. Die Bauchseite ist entsprechend dem Verlauf der subcutanen Plattenreihen mehr oder minder deutlich gefurcht und die grobe Granulation mit Ausnahme der oralen Umgebung in deutlicheren Gruppen gesondert. Diese groben Granula haben bei dem Pulo Edam Exemplare die Form kleiner polygonaler Tafeln, bei dem andern sind sie etwas weniger dicht gestellt und mehr perlartig.

Dass zwischen diesen drei Ausbildungsformen allemöglichen Uebergänge vorkommen, unterliegt kaum einem Zweifel. Schon das Hubrecht'sche Exemplar nähert sich durch den perlartigen Charakter der groben Granulation, und dadurch, dass die groben Granula wohl in scharf getrennten Zügen aber nicht in vollständig gesonderten Gruppen stehen, den beiden andern Varietäten. Ein Hamburger Exemplar von Java dagegen hat ganz die feine polygonale Tafelung und Gruppenständigkeit unsres von Pulo

Notes from the Leyden Museum, Vol. XIV.

Edam stammenden Stückes, aber auf der Rückenseite viel dichter stehende Dornen und auch Dornen auf den Porenfeldern.

Ein sehr merkwürdiges mittelgrosses Exemplar von Pulo Edam besitzt die Göttinger Sammlung, welches zu *C. novae guineae* zu stellen etwas gewagt sein dürfte. Ziehen wir indessen in Erwägung, dass es von einem Fundorte stammt, wo diese Art erwiesener Maassen vorkommt, dass es ferner ein jüngeres Exemplar ist, und dass es fast nur durch die höchst eigenthümliche Felderung der Bauchseite abweicht, so werden unsre Bedenken, wenn auch nicht ganz schwinden, so doch wesentlich verringert. Es hat die charakteristische hochgewölbte abgerundete Form unserer Art. Die Bedornung des Rückens ist die typische, indem sie der des Leydener Originals gleicht, obwohl sie im Allgemeinen etwas schwächer ist. Die Madreporenplatte ist von einem Kranze kräftiger Dornen umgeben. Die Porenfelder sind rundlich und auffallend klein für die Art. Sie erreichen auf den Seitenflächen bei weitem nicht die Ventralkante (was sich indessen auch an ganz zweifellosen Individuen der Species gelegentlich wiederholt). Die grobe Granulation ist in Gruppen gesondert, die ihrer Lage nach den Tafeln des unter der Haut liegenden Skelettes entsprechen. Die Gruppen sind von beträchtlicher Grösse, enthalten etwa 20–25 Granula von der Form kleiner polygonaler Täfelchen und sind im ganzen schwach vorgewölbt. Sie sind von einander durch etwa 1 mm. breite Züge einer mit zahlreichen groben Körnern untermischten Granulation getrennt, welche im Interradius zu einem Doppelstrang zusammentreten. Die die äussere Ambulacralbewaffnung vertretende grobe Granulation der Ambulacralplatten ist perlartig, und sind dadurch die Gruppen von der Ambulacralrinne durch ein ziemlich breites Band von sehr differenten Aussehen getrennt. Da das Exemplar die Bedornungsart des Rückens unserer ersten Varietät hat, welche auf den Porenfeldern bedeutend feiner ist als auf den Zwischenräumen, dagegen auf der

Notes from the Leyden Museum, Vol. XIV.

Bauchseite gruppenständige polygonale Täfelchen besitzt wie das Pulo Edam Exemplar unsrer dritten Varietät, so kann man es als eine Art Bindeglied zwischen beiden auffassen.

Als Hauptmerkmale der Art seien nochmals die grobe Granulation der Bauchseite und für gute Spiritus Exemplare die hoch gewölbte Körperform und die abgerundeten Ecken hervorgehoben.

Die als dritte Varietät beschriebenen Formen mit gruppenständiger grober Bauchgranulirung und mangelnder Bedornung auf den Porenfeldern würden sich bei anatomischer Untersuchung vielleicht als sexuell differenziert erweisen, sie als eigene Art aufzufassen scheint mir einstweilen nicht geboten.

Culcita plana, n. sp.

Körper flach scheibenförmig (an jüngeren Exemplaren gewölbt), mit schwach eingebogenen Seiten und vortretenden Ecken. Porenfelder rosettenständig, klein, zahlreich; auch auf den Seiten klein. Bedornung des Rückens fein. Dornen der Porenfelder kleiner als die der Zwischenräume. Bauchseite von feiner Granulation bedeckt, zwischen welcher schwach vortretende Gruppen etwas gröberer Granula stehen, die jedoch nicht auf scharf begrenzten Feldern liegen. Die Gruppen bilden Reihen und entsprechen ihrer Lage nach den subcutanen Skeletttheilen. Innere Furchenpapillen in Gruppen von 5—6 ziemlich gleichmässigen Stäbchen. Aeussere Furchenpapillen in zuweilen ähnlichen, der Rinne parallel liegenden Gruppen von meist drei Tuberkeln, deren Stärke gering ist. Bisweilen eine dritte undeutlich differenzierte Reihe. Manchmal kleine Pedicellarien von der Grösse und Form kleinerer Granula in Menge auf der Bauchseite. Madreporenplatte von einem Dornenkranze umgeben.

Färbung in Spiritus: meist weisslich, seltener grau gelb. Grösse: bis 160 mm. Dm.

Notes from the Leyden Museum, Vol. XIV.

Fundorte: Samoa, Viti, Neu Guinea, Philippinen, Amboina, Mauritius.

Zu dieser Species, gehört das erwähnte, fälschlich als *C. novae guineae* M. T. bestimmte Exemplar des Leydener Museums, welches von Salomon Müller auf Neu Guinea gesammelt wurde. Sie ist möglicher Weise mit *C. pentangularis* identisch; um den Leser darüber das Urtheil zu erleichtern, citire ich hier wörtlich die Gray'sche Beschreibung seiner Art ¹⁾:

»Body pentangular; back flat when dry, convex beneath, minutely and closely granulated, with obscure reticulations, the reticulations armed with small conical tubercles; the interspaces closely and minutely porous. The oral surface protected by distinct well defined ossicula, defining the lower edge of the margin, covered with close and minute granules and larger round topped tubercles, those near the ambulacra and the oral angles being largest and highest. Gray, P. Z. S. 1847, p. 47. Inhab. — Reef of Oomaga.»

C. pentangularis Gray scheint sich also von unsrer Art dadurch zu unterscheiden, dass ihre Porenfelder keine Dornen tragen und ihre ventralen Granulationsgruppen scharf begrenzt sind. Ich halte es aber auch für möglich, dass beide zu einander in einem ähnlichen Verhältniss stehen wie unsre dritte Varietät von *C. novae guineae* zu unsrer ersten, dass sie also nur eine Art bilden.

Mit *C. novae guineae* hat unsre Species nur in der dorsalen Bedornungsart eine gewisse Aehnlichkeit. Der Bestimmer des Leydener Spiritus-Exemplares hielt dasselbe möglicherweise für ein junges Individuum dieser Art, da seine Grösse, wie die fast aller übrigen Exemplare, die ich sah, ziemlich gering ist ($R + r$ 117 mm.). Dass diese Annahme jedoch durchaus verkehrt gewesen wäre, zeigt ein grösseres Exemplar von den Philippinen im Göttinger Museum, welches in jeder Hinsicht die typischen Merkmale besitzt.

In Bezug auf die ventralen Gruppen etwas gröberer Granula variirt die Art sehr. Diese Gruppen können ganz klein sein und nur aus wenigen, kaum merklich grösseren

1) Synopsis of the Species of Starfish, London, 1866 p. 5.

Notes from the Leyden Museum, Vol. XIV.

und lose vereinigten Körnern bestehen, oder aber ziemlich gross und körnerreich sein und sich in letzterem Falle so nähern, dass ihre gegenseitige Abgrenzung verwischer wird. Ohne dass ich derartige Exemplare gesehen habe, halte ich es für wahrscheinlich, dass bei weitergehender Ausbildung im letzteren Sinne auch Stücke vorkommen, die auf der Bauchseite mit einer mässig groben Granulation gleichmässig bedeckt sind. Für ein solches Exemplar halte ich z. B. ein als *C. coriacea* M. T. bestimmtes Stück von Mauritius (Robillard), von dem mir Herr Prof. v. Martens in Berlin auf meine Bitte Photographieen anfertigen liess. Dasselbe gleicht von der Rückenseite durchaus unsrer Art und unterscheidet sich von *C. coriacea* M. T. sehr wesentlich durch den Besitz getrennter Porenfelder. Andererseits würde das Extrem mangelhafter Gruppenbildung eine ganz gleichmässige sehr feine Granulirung der Bauchseite sein. Das Hamburger Museum besitzt ein Stück von Samoa, bei welchem ein derartiges Verhalten fast erreicht ist.

Sehr charakteristisch für die Species ist ferner die äussere Ambulacralbewaffnung, welche der inneren durch ihre in der Richtung der Rinne stehenden Tuberkelgruppen manchmal (Philippinen-Exempl. in Göttingen) in auffallender Weise gleicht.

Ein junges Exemplar von den Viti Inseln im Lübecker Museum unterscheidet sich durch einen gewölbteren Rücken. Die Seiten aber sind eingebogen und die Ecken stark vortretend. Die Gruppen der Bauchseite sind sehr deutlich und vorgewölbt, aber nirgends durch scharfe Furchen begrenzt. Das Exemplar hat einen Durchmesser von 80 mm. ($R + r$). Die Lage der unteren wie oberen Marginalplatten ist äusserlich noch erkennbar.

Die Porenfelder, auf deren Kleinheit nochmals hingewiesen sei, scheinen ventralwärts niemals über die dorsale Grenze der oberen Marginalplatten hinauszureichen. Die Granulation der Bauchseite kann der von *C. coriacea* sehr ähnlich sehen, bei welcher die gröberen Körner auch ge-

Notes from the Leyden Museum, Vol. XIV.

legentlich in undeutlichen Gruppen stehen (trocknes Exempl. im Stuttgarter Museum vom Rothen Meer); in solchen Fällen dürfte jedoch nicht nur die so verschiedene Vertheilung der Poren sondern auch der für *C. coriacea* eigenthümliche Charakter der dorsalen Granulirung sofort entscheidend sein (s. pag. 91).

Culcita grex M. T. 1842 l. c. — Taf. 1 und 2.

»Verhältniss des kleinen Radius zum grossen wie $1:1\frac{1}{4}$. Körper regelmässig pentagonal. Die Furchenpapillen in einer Reihe, 6—7 auf jeder Platte, gedrängt, platt, die Höhe der daneben liegenden Platten nicht erreichend. Die Bauchfläche scheint dicht mit grösseren und kleineren weissen Körnern und Tuberkeln besetzt, ohne dass sich Häufchen grösserer Körner bildeten. Der Rücken scheint glatt und schwarz zu sein. Rundliche oder ovale, sehr grosse Porenfelder, bis 3 Linien lang, erheben sich aus der lederartigen Bedeckung des Rückens und bilden kleine Hügel, welche sehr viele Poren enthalten und mit vielen weissen grösseren und kleineren Körnern bedeckt sind, so dass sie hell gegen den schwarzen Grund abstechen. Die Madreporenplatte ist sehr erhoben und steht auf ein Drittel der Entfernung vom Centrum zum Rande. Klappenartige Pedicellarien von der Grösse der Körner auf der Bauchseite.

Grösse: $5\frac{1}{2}$ Zool.

Fundort: unbekannt. In den Museen zu Leyden und Paris." ¹⁾

Diese Beschreibung der Autoren beruht auf einem trocknen Exemplare des Leydener Museums; die Rückenseite desselben ist gut, die Bauchseite aber sehr schlecht erhalten; die häutige Bedeckung der letzteren mit ihrer Granulation ist nur noch an wenigen Stellen erkennbar, worauf die Worte „die Bauchfläche scheint“ etc. begründet sind. Das Exemplar ist durch Eintrocknung sehr geschrumpft, und die natürliche Form des Körpers ist durch weites Auseinanderklaffen der Ambulacralrinnen verloren gegangen. Die Beschreibung konnte mithin nur sehr lückenhaft ausfallen, und die Bestimmung danach wird noch dadurch erschwert, dass die Autoren die Porenfelder als sehr gross bezeichnen, während sie in der That, verglichen wenig-

1) Müller und Troschel, „System der Asteriden“, 1842, p. 39.

stens mit den Porenfeldern von *C. novae guineae*, eher klein zu nennen sind. Im Pariser Museum scheinen sich nach Perrier mit Sicherheit keine Exemplare als *C. grex* bestimmen und auf die Autoren zurückführen zu lassen, wenngleich Perrier ¹⁾ drei als *C. novae guineae* bestimmt gewesene Stücke auf sie zurückführen möchte.

Das Leydener Museum besitzt zum Glück ein von den Moluccen stammendes von Salomon Müller gesammeltes Spiritus Exemplar, das unzweifelhaft zu dieser Art gehört und auch als solche später bezeichnet wurde. Es ist vortrefflich erhalten und gestattet also unter Berücksichtigung des Typus folgende neue Diagnose aufzustellen:

Gestalt gewölbt, mit convexen Seiten und abgerundeten Ecken. Porenfelder rosettenständig, rundlich und von mässiger Grösse, an den Seiten länglich und grösser, nicht bis an die Ventralkante reichend, nirgends verschmolzen. Dornen des Rückens sehr fein und auf die Porenfelder beschränkt. Granulirung des Rückens und der Seiten dicht und von ausserordentlicher Feinheit. Granulirung der Bauchseite ebenfalls sehr fein und gleichmässig und, mit Ausnahme einer kurzen Reihe kräftiger Tuberkel auf den an die Adambulacralia stossenden Platten, ohne Gruppen grösserer Granula und ohne Granulationszüge vom Verlaufe der ventralen Plattenreihen. Innere Furchenpapillen in Gruppen von 4—6; ihnen entsprechend ein, selten zwei kräftige etwas dornartige Tuberkel in der äusseren Waffenreihe. Manchmal »Pedicellarien von der Grösse der Körner auf der Bauchseite«. Madreporenplatte von mässiger Grösse.

Färbung in Spiritus: einfärbig gelblich weiss.

Grösse: 125 mm. Dm.

Fundort: Moluccen, durch Salomon Müller im Leydener Museum.

Durch das freundliche Entgegenkommen des Herrn Dr. Jentink bin ich in der Lage die von letzterem Exemplar gemachten photographischen Aufnahmen hier publi-

1) *Stellerides* du Museum: Arch. Zool. exp. 1876, p. 77.

ciren zu können. Leider kann man an denselben selbst auf den schärfer eingestellten Stellen die Granulation des Rückens auch mit der Lupe nicht erkennen, deren ausserordentliche Feinheit die Species von allen andern bisher bekannten auszeichnet. Auch an dem M. T. trocknen Original Exemplare lässt sich dieselbe nicht wahrnehmen, was wohl Folge der Eintrocknung und Verschmutzung ist und die Autoren veranlasste den Rücken als »glatt« zu bezeichnen. Für das unbewaffnete Auge ist diese Bezeichnung übrigens auch auf alle Fälle zutreffend. Im Vergleich mit dem Originale ist sodann hervorzuheben, dass die Bedornung der Porenfelder des Spiritus Exemplares, wo sie nicht ganz fehlt, viel schwächer ist. Die feinen kleinen und ziemlich spärlichen Tuberkel, welche sich hier aus der allgemeinen Granulation abheben, sind kaum Dornen zu nennen. — Das von den Autoren hervorgehobene hügelartige Hervortreten der Porenfelder ist offenbar nur durch Eintrocknung entstanden, ebenso das Vorspringen der Madreporenplatte. An dem Spiritus Stücke ist die Madreporenplatte klein, nicht von Dornen umgeben und kaum irgendwie hervorragend. Ferner ist gegenüber der Originalbeschreibung auf die ganz eintönig gelblich weisse Färbung des Moluccen Exemplares nochmals hinzuweisen. Der Charakter der ventralen Granulation wurde von den Autoren aus den wenigen Resten ihres Exemplars sehr richtig gemuthmasst. Aus der aus »grösseren und kleineren Körnern« bestehenden aber überall sehr feinen Granulation der Bauchseite treten nur eine sehr geringe Anzahl stellenweise paariger grober Tuberkel hervor, welche ihrer Lage nach den an die Adambulacralia stossenden Skelettplatten entsprechen und eine der Rinne parallellaufende kurze Reihe bilden. Pedicellarien nachzuweisen ist mir nicht gelungen. Die inneren Furchenpapillen sind auf der Wandseite durch eine Membran verbunden, die nur das äusserste Ende frei lässt. Was die Gestalt betrifft, so ist dieselbe leider auch am Spiritus Exemplare durch Quetschung sehr geschädigt. Der Umriss ist noch mehr wie bei *C. novae guineae* abgerundet, und der Rücken

Notes from the Leyden Museum, Vol. XIV.

scheint gewölbt gewesen zu sein. Das M. T. Original ist sehr instructiv für die Kenntniss des ventralen Skelettes.

Culcita coriacea M. T. 1842, l. c.

Der Vollständigkeit halber sei auch von dieser Art die M. T. Diagnose hier wiedergegeben.

»Gestalt und Verhältnisse der vorigen: (*C. discoidea* Agass.). »Furchenpapillen in einer Reihe, 5—7 auf jeder Platte, von denen die mittleren die längsten sind; nach aussen davon dicke Tuberkeln in einer Querreihe auf einer Platte. Sie gehen in die Knötchen der Bauchseite über. In einer feineren Granulirung der Bauchfläche erheben sich wie bei der vorigen Art sehr niedrige stärkere Knötchen, welche nicht in Haufen, sondern entweder zerstreut stehen, oder eine Neigung haben, sich in einfache oder haufenförmige Reihen zu ordnen, welche schief von den Furchen abgehen. An den Seiten und auf dem Rücken werden die Knötchen spitzig und viel kleiner; auch die kleineren Granula des Rückens sind zerstreut und verlängert. Die grossen Tuberkeln der vorigen Art fehlen. Die Pedicellarien haben auf der Bauchseite platte aber wenig breite Arme, so dass sie den Uebergang von den klappenartigen zu den zangenartigen bilden. Auf der Rückenseite und an den Seiten sind sie zangenartig.

Grösse $5\frac{1}{2}$ Zoll, am Rande über 1 Zoll hoch.

Fundort: Rothes Meer. Im Museum zu Berlin durch Hemprich und Ehrenberg. Auch in den Museum von Paris und Bamberg."

Meine Kenntnisse der Art beruhen bis jetzt auf einem trocknen Original Exemplare des Berliner Museums sowie zwei Exemplaren aus dem Stuttgarter Naturalien Kabinet, von denen das eine in Alcohol conservirt ist. Ich bemühte mich an ihnen vergeblich über die Vertheilung der Rückenporen Aufklärung zu gewinnen. Obwohl ich mit Sicherheit überhaupt keine habe entdecken können, ist es nicht wahrscheinlich, dass sie gänzlich fehlen. Sicher ist nur, dass sie nicht in Feldern stehen. Müller und Trotschel sagen gar nichts darüber, was auffallend genug ist und de Loriol (s. unten) zu einer ganz irrthümlichen Auffassung veranlasste. An dem Stuttgarter Spiritus Exemplare liessen einige Stellen am Rande des Rückens auf ein Vorhandensein von Hautkiemen schliessen. Da die Rückenhaut aber überall sehr dünn zu sein scheint, so wäre es immerhin denkbar, dass die Athmung auch ohne die Ver-

Notes from the Leyden Museum, Vol. XIV.

mittlung besonderer Organe vorsichginge. — Eigenartig ist die dorsale Granulierung. Eine dichte, körnige, feine Granulation, wie sie zwischen den Porenfeldern anderer Arten steht, scheint ganz zu fehlen; dagegen ist der Rücken übersät von einer Menge getrennt stehender kleiner spitzer Dornen, die an ihrer Basis verdickt sind und hier einen Kranz ganz kleiner Stäbchen tragen. (Ähnliche Dornen findet man auch auf den Porenfeldern von *C. novae guineae*). Auf den Seitenflächen des Berliner Typus von *C. coriacea* stehen viele derartige Dornen, die dicht unterhalb ihrer Spitze etwas verdickt waren und hier eine Art Zackenkrone besaßen. — Die Gruppen der inneren Ambulacralpapillen bestehen aus 6—7 Stäbchen, sind aber nicht immer fächerförmig, sondern ihre Höhe nimmt manchmal nach ihrem peripheren Ende hin zu, sodass vom Munde aus gezählt das erste Stäbchen am kleinsten, das letzte am längsten ist. Die äusseren Papillen sind an dem grossen Stuttgarter Weingeist-Exemplare, dessen Durchmesser 170 mm. beträgt, sehr kräftig und stumpf dornförmig. Zangenförmige Pedicellarien stehen nicht nur in Menge auf dem Rücken sondern kommen auch an den Ambulacralrinnen vor (trocknes Exempl. Stuttgart). — Die Madreporenplatte ist klein. — Die Färbung des Weingeist-Exemplares ist dorsal dunkelbraun, ventral hell gelblich braun.

Dass die Species nicht identisch ist mit *C. schmideliana* Retz., wie de Loriol für wahrscheinlich hielt, hat bereits Döderlein durch eine treffende Vergleichung der beiden Arten dargethan. De Loriol glaubte, da die Autoren den Mangel der Porenfelder nicht erwähnten, dass die Species solche besitze und hielt daher Exemplare einer andern Species, die de Robillard auf Mauritius sammelte, für *C. coriacea*. Von diesen sagt er »la face dorsale est toujours couverte de grandes aires porifères limitées par des trabécules". Ich habe durch die Güte des Herrn Prof. von Martens in Berlin die Photographieen eines dieser von de Robillard herstammenden Stücke

Notes from the Leyden Museum, Vol. XIV.

erhalten und kann danach, trotzdem auch Studer ¹⁾ die Art von Mauritius anführt, versichern, dass dieselben gewiss nicht zu *C. coriacea* gehören. Der Photographie nach möchte ich glauben, dass sie zu meiner neuen Art zu rechnen sind (s. pag. 84). Unerklärlich aber ist mir, wie de Loriol auf Grund solcher Stücke eine Identität von *C. schmideliana* Retz. und *coriacea* M. T. für möglich halten konnte, da eine Aehnlichkeit derselben mit der Retzius-schen Species absolut nicht vorliegt.

Als Diagnose möchte ich für die Art folgende vorschlagen:

Gestalt flach scheibenförmig, Ecken vorspringend. Keine Porenfelder. Rücken und Seiten gleichmässig mit zahlreichen feinen getrennt stehenden Dornen bedeckt, die einen Kranz kleiner Stäbchen an ihrer Basis tragen. Bauchseite mässig grob granulirt; die gröberen Granula in Reihen, welche schief von den Furchen abgehen, und manchmal in undeutlich begrenzten Gruppen stehend; dazwischen eine sehr feine Grund-Granulirung. Innere Furchenpapillen ziemlich fein, in Gruppen von meist 6—7; äussere in einer Reihe von kräftigeren, zuweilen stumpf-dornförmigen Tuberkeln, an welche sich nach aussen gröbere Granula anschliessen und in die Granulation der Ventralplatten übergehen. — Auf der Rückenseite zahlreiche zangenförmige, auf der Ventralseite diese und kleine klappenartige Pedicellarien. — Madreporenplatte klein.

Färbung in Spiritus: oben dunkelbraun, unten hellbraun. Grösse: bis 210 mm. Dm. (Perrier).

Fundorte: Roth's Meer (Koseir), Moçambique (fide Peters »nicht selten bei Ibo«; v. Martens).

Culcita arenosa Perrier, 1869, l. c.

Gestalt flach scheibenförmig, Ecken nicht abgerundet. Porenfelder mehr oder minder rosettenständig, zur Verschmel-

1) l. c. 1884.

zung neigend, von mittlerer Grösse, auch die Seitenflächen bis an die ventrale Kante bedeckend. Rücken und Seiten mit nur einer Sorte kleiner schlanker spitzer Dornen bedeckt, die ziemlich zerstreut stehen aber gleichmässig vertheilt sind. Bauchseite mässig grob granulirt. Die gröbere Granulation dicht, nicht gruppenständig, perlartig. Verlauf der ventralen Plattenreihen nur stellenweise durch seichte Furchen schwach angedeutet. Innere Furchenpapillen ziemlich kräftig, in Gruppen von 5—6. Aeussere in Gruppen von 2—3 groben, oft cylindrischen oder conischen Tuberkeln. Zuweilen noch eine dritte Reihe weniger grosser Tuberkel. Kleine zangenförmige Pedicellarien in der Nähe der Rinnen, sowie zahlreiche kleinere, von der Grösse und Form gröberer Granula, auf der Bauchseite. Madreporenplatte ohne Dornenkranz.

Färbung in Spiritus: schmutzig weiss, oder dunkel olive mit schmutzig violetten Hautkiemen.

Grösse: bis 200 mm. Dm. ($R + r$).

Fundorte: Sandwich Inseln (Typus), Amboina, Ceram Laut.

Die Bestimmung dieser zweifellos guten Art war insofern bisher mit Schwierigkeiten verbunden, als Perrier die Porenfelder als undeutlich und die Poren als gleichmässig über den ganzen Rücken vertheilt beschrieben hatte. Diese Aussage beruhte, wie der Autor die Güte hatte mir brieflich mitzutheilen, auf einem Irrthum. Die Art hat also, wie die meisten andern, getrennte Porenfelder, obgleich diese entschieden zur Verschmelzung neigen. An einem Göttinger Exemplare von Amboina, dessen Photographie ich Prof. Perrier zur Begutachtung meiner Bestimmung schickte, sind z. B. die einzelnen Felder eines Rosettenringes in der Regel miteinander etwas verwachsen. Da Perrier die Poren für gleichmässig vertheilt hielt und die Porenfelder als »indistinctes» beschrieb, so hätte nach unserm Dafürhalten ein Vergleich mit *C. coriacea* M. T. nahe gelegen, mit welcher die Species ohne Frage viel Aehnlichkeit hat. Dagegen scheint der Autor eine grössere Verwandtschaft mit *C. grex* angenommen zu haben, mit wel-

Notes from the Leyden Museum, Vol. XIV.

cher die Art eingehender verglichen wird. Mit dieser hat jedoch *C. arenosa* kaum etwas gemein. Die Form von *C. grex* ist nicht abgeplattet, wie Perrier glaubt, und abgesehen davon ist der Charakter der Granulation und die Vertheilung der dorsalen kleinen Dornen bei *C. grex* ein so eigenthümlicher, dass sie mit keiner andern bekannten Art verwechselt werden kann. Mit *C. coriacea* M. T. aber theilt unsre Species die Körperform, ferner einen ganz ähnlichen Habitus der Bauchseite und schliesslich die Einförmigkeit der dorsalen Dornen. Letztere stehen jedoch bei jener dicht, bei letzterer zerstreut. Diese Einförmigkeit der dorsalen Dornen unterscheidet *C. arenosa* leicht von *C. novae guineae* und Verwandten, bei denen die Dornen der Porenfelder viel kleiner sind als die der Zwischenräume.

Von den Exemplaren dieser Art, die mir zu Gebote standen, waren zwei von den Sandwich Inseln, eins dem Stuttgarter, eins dem Göttinger Museum gehörig. Beide sind ausgezeichnet durch sehr kräftige, schlank conische Form ihrer äusseren Ambulacralpapillen. Dieselben scheinen an dem Perrier'schen Originale ähnlich zu sein, insofern sie hier als »cylindrisch" bezeichnet wurden; anders aber erscheinen sie an dem Stücken von Amboina und Ceram Laut, wo sie kurz, dick und abgerundet sind. Sie stehen selten einzeln, sondern kommen meist als Zwillingstuberkel vor und an dem Amboina Exemplare bilden sie stellenweise sogar Gruppen von drei mit einander verwachsenen. Von den Zwillingstuberkeln ist gewöhnlich der eine viel grösser wie der andre. Die Stellung dieser Gruppen ist häufig eine zur Rinne quere, braucht es aber nicht zu sein. Das Amboina Exemplar besitzt eine fast überall deutliche dritte Bewaffnungsreihe in Gestalt einfacher dicker rundlicher Tuberkel.

Der ziemlich schmale Raum zwischen der ventralen Grenze der Porenfelder und der Bauchkante ist mit stärkeren Dornen besetzt, die in die perlartige gröbere Granulation der Ventralfläche allmählig übergehen.

Die von Perrier beschriebenen zangenartigen Pedicel-

Notes from the Leyden Museum, Vol. XIV.

larien des Rückens habe ich nicht gefunden, ebenso ist der von ihm erwähnte eigenthümliche Verlauf der Furchen der Madreporienplatte kein constantes Merkmal. An dem Amboina Exemplare z. B. haben dieselben einen entschieden radiären Verlauf.

Die Art ist aufs nächste verwandt, wenn nicht gar identisch, mit der folgenden.

Culcita acutispinosa Bell, 1883, l. c. p. 334.

Diese Art soll von allen anderen dadurch unterschieden sein, dass die Enden ihrer Ambulacralrinnen nicht auf den Rücken übergreifen. Es ist dies jedoch unsres Erachtens ein etwas trügerisches Merkmal, da ich Exemplare von *C. novae guineae* sah, bei denen dies ebenso wenig der Fall war, und bei denen die Länge der einzelnen Rinnen ganz erheblich variirte (vergl. pag. 72). Da aber die Art auf nur ein Individuum begründet wurde, so scheint mir das Verhalten der Ambulacralrinnen noch kein genügender Grund für die Annahme der Species zu sein. Die übrigen von Bell angeführten Merkmale weisen aber zum grossen Theil auf Uebereinstimmung mit *C. arenosa* Perr. hin. Zur Bestätigung dessen führe ich folgende Citate an:

»Resembling *C. coriacea*«. — »The body is almost completely discoideal in shape«. — »The adambulacral spines are in two rows»; »in the outer row there are generally two spines, one of which is much smaller.« »The actinal surface is not marked out into areolae.« »The greater part of the sides and the whole of the abactinal surface of the disk are covered with short sharp spines, which are scattered over them with considerable profusion, though in no definite order; dotted among the spines are pores of moderate size, which are very indistinctly grouped into pore-areas.«

Ich kann nicht läugnen, dass mich diese Stellen mit einigem Zweifel erfüllen; einige andre freilich könnten vielleicht doch für die Species sprechen, so z. B. »the an-

Notes from the Leyden Museum, Vol. XIV.

gles of the rays being very nearly altogether rounded of." Aber dann versteht man kaum, wie die Art *C. coriacea* ähneln soll, bei der die Ecken keineswegs abgerundet sind. Bemerkenswerth ist ferner (»the actinal surface'') »is richly invested by a number of short, blunt, stout processes, hardly to be called spines, amidst which a coarse granular covering is to be observed." Dies Verhalten wäre vielleicht dasjenige, welches noch am meisten für die Berechtigung der Species ins Gewicht fällt.

Der Fundort der Art sind die Neuen Hebriden (Aneityum Insel).

Culcita veneris Perr. 1879, l. c.

Die Merkmale dieser interessanten Art lassen sich nach der Originalbeschreibung zu folgender Diagnose zusammenfassen:

Körper weich, Gestalt mehr oder minder fünfeckig, in Leben dehnbar und im Zustande stärkster Wasseraufnahme fast kugelig. Keine Porenfelder. Hautkiemen zahlreich, gleichmässig über die ganze Rückenfläche und die Seiten bis an die Bauchkanten vertheilt. Sämmtliche Ornamente, wie Granulation, Tuberkel, Dornen, Pedicellarien, ferner innere und äussere Ambulacralbewaffnung bekleidet und mehr oder weniger verborgen durch Fortsätze der Haut. Auf dem Rücken kleine, spitze, bewegliche unregelmässig zerstreute unter der Haut verborgene Dornen in grosser Zahl. Bauchseite von häutigen Papillen bedeckt, die in Streifen von etwa 5 mm. Breite stehen und durch feine Furchen getrennt sind; ferner ausgezeichnet durch stumpfe, ziemlich lange, dünne, bewegliche Spitzen (*pointes*), welche häufig in Gruppen von zweien stehen, die 1—2 mm. von einander entfernt sind. Diese Spitzen werden gegen die Ambulacralrinne hin stärker und bilden hier 2 Reihen, die sich nach den Enden der Rinne zu einander nähern. Innere Furchenpapillen in Gruppen von zweien seltener dreien. Madreporienplatte klein.

Notes from the Leyden Museum, Vol. XIV.

Färbung: schön orange roth.

Grösse: 120—130 mm. Dm.

Fundort: St. Paul, Pariser Museum, durch Vélain und Rochefort.

Die Art soll bei St. Paul ziemlich häufig sein. Die Sammler beobachteten, dass sie ihre Gestalt verändern kann, bald kuglig wird, bald sich abplattet und dann sternförmig wie andre Asteriden wird.

Die Furchen der Bauchseite dürften der Beschreibung nach den auch bei andern Culciten (*C. coriacea*, *arenosa*) gewöhnlichen Verlauf haben.

C. schmideliana Retz. 1805, l. c.

Diese Art ist die am längsten bekannte; sie wurde bereits 1781 von Schmidel unter der Bezeichnung eines Seesternes mit rosenförmigen Verzierungen beschrieben und von der Bauchseite vortrefflich abgebildet. Die ältere Litertatur der Art hat 1876 Perrier l. c. zusammengestellt, von späteren Besprechungen sind nur die von de Loriol, Döderlein und Bell 1887 l. c. von Wichtigkeit. De Loriol's Verdienst ist besonders die Beschreibung und Abbildung jugendlicher Exemplare. Er weist nach, dass die Gray'sche Gattung »*Randasia*» auf jungen Culcita Exemplaren beruhe, wie es bereits Perrier vermuthet hatte. Die junge *Culcita schmideliana* von 58 mm. Dm. hat ganz das Aussehn eines *Goniodiscus* »les côtés sont un peu échancrés, les plaques marginales très distinctes, les dorsales étroites au nombre de treize pour un arc interbrachial, les ventrales au nombre de 17, plus larges au milieu de l'arc, plus petits vers les extrémités, formant exclusivement le bord sans participer à la face ventrale. Les trabécules de la face dorsale sont très distincts et ils portent déjà les tubercules coniques caractéristiques» (vergl. pag. 101 Anm.). Das Göttinger Museum besitzt ein junges Exemplar von 95 mm. Dm., das dieser Beschreibung durchaus entspricht. Nur die Marginalplatten sind etwas zahlreicher, indem man

Notes from the Leyden Museum, Vol. XIV.

nach Entfernung der Granulation oben 16, unten über 20 für jeden Arm zählt. Die Ventralseite ist regelmässig gefeldert, die Felder in der Regel scharf sechseckig, obwohl die darunterliegenden Skelettplatten sämtlich abgerundet sind. Die Porenfelder sind rosettenständig, dreieckig, an vielen Stellen verschmolzen, und überall dicht stehend.

Wie sehr diese Art der Variation unterliegt, wurde schon erwähnt (pag. 67). Die groben Tuberkel der Rückenseite können ganz fehlen (von Bruguières 1791 l. c. Taf. 97 abgebildetes Exemplar) oder in beträchtlicher Anzahl über den Rücken zerstreut sein. Die charakteristischen Gruppen grober Granula auf der Bauchseite, können sehr klein sein und aus nur zwei oder drei Körnern bestehen, oder sie können gegenüber der feinen Grundgranulation stark überwiegen und sich aus viel zahlreicheren Körnern zusammensetzen. Im ersteren Fall sind die Gruppen, da eine jede einer ventralen Skelettplatte entspricht, weit von einander getrennt, im letzteren Falle sich gegenseitig stark genähert. Ebenso variirend ist die Felderung der Bauchseite. Dieselbe kann sehr ausgeprägt sein oder auch gänzlich fehlen wie bei einem Göttinger Stücke von Zanzibar.

Diagnose:

Gestalt flach, scheibenförmig; Ecken nicht abgerundet. Porenfelder rosettenständig, stark zur Verschmelzung neigend, auf den Seiten nicht bis an die Ventral-kante reichend. Sehr plumpe grobe Dornen auf den porenfreien Räumen des Rückens und den oberen Hälften der Seiten, resp. auf den Verschmelzungsstrecken der Porenfelder, in sehr wechselnder aber niemals bedeutender Zahl; selten ganz fehlend. Keine feinere Dornen auf den Porenfeldern. Bauchseite mit Gruppen sehr grober perlartiger seltener etwas dornförmiger Granula; oft deutlich gefeldert oder gefurcht. Innere Ambulacralpapillen meist kräftig, von ungleicher Länge, in Gruppen von 4—7; Aeusere nicht stärker, häufig schwächer wie die dicksten Granula der Ventralplatten, in der Richtung der Rinne manchmal

Notes from the Leyden Museum, Vol. XIV.

comprimirt, meist zwei Reihen bildend. Pedicellarien der Rückenseite von der Grösse und Form feiner Granula; auf der Bauchseite ähnliche, und vereinzelte zangenförmige auf den Adambulacralien.

Färbung in Spiritus: hell grau braun; im Leben (nach Desjardins l. c.): mehr oder minder hell gelblich; Rücken mit grossen schwärzlichen Flecken auf gelblich braunen Grunde. Die dicken Tuberkel des Rückens schwärzlich. Innere Papillengruppen der Ambulacralrinne carminroth, ebenso die übrigen groben Granula der Bauchseite, deren Carminfärbung jedoch schwächer wird, je weiter sie von der Rinne entfernt stehen. Ambulacralfüsse weiss mit carminrothen Furchen.

Grösse: bis 250 mm. Dm. (nach Desjardins).

Fundorte: Zanzibar, Moçambique, Madagascar, Mauritius, Ceylon, Andamanen, Java? Stiller Ocean? Galapagos??

Littorale Lebensweise.

Die Diagnose, welche Müller und Troschel von dieser Art gegeben haben, könnte insofern irre führen, als sie sagen: „Aus der allgemeinen Granulation der Bauchfläche treten viele ungranulirte kurze perlartige Knoten hervor, welche sich zu Häufchen zusammenrotten ohne Reihen zu bilden.“ Die so gebildeten Häufchen entsprechen aber ein jedes einer subcutanen Skelettplatte und bilden somit sehr deutliche Reihen. Wenn die Gruppen gross sind, sind ihre Reihen ununterbrochen.

DAS SKELETT ¹⁾).

Unsre Kenntnisse des Culcitaskelletes beruhten bisher auf der Beschreibung und den Abbildungen Viguiers. Seine Angaben beziehen sich auf *C. schmideliana*, dieselbe Art,

1) Meine Beobachtungen wurden vorwiegend an einem Göttinger, von Mauritius stammenden Exemplare von *C. schmideliana* Retz. gemacht und beziehen sich, wenn nicht Andres bemerkt wird, sämmtlich auf dieses. Durchmesser 127 cm.

die in erster Linie auch mir als Untersuchungsobject diente. Ich bin jedoch zu ziemlich verschiedenen Resultaten gekommen und glaube namentlich, dass die Abbildung (s. fig. 1), welche jener Autor von dem Skelett der Bauchseite gegeben hat, von dem bei der Art und dem ganzen Genus bestehenden Verhalten einen falschen Begriff giebt.

Ich entnehme der Viguiér'schen Abhandlung folgende Stellen: »La face ventrale est composée d'ossicules épais à surface normalement hexagonale, sauf sur le bord des sillons où elle est pentagonale et vers la marge du disque où elle devient irrégulière''. . . . »Ils sont arrangés en séries régulières parallèles au bord des sillons, mais deviennent sans ordre apparent vers le bord du disque où ils sont beaucoup moins épais et recouvrent les plaques marginales inférieures. L'ensemble forme une véritable carrelage''.

Betrachten wir eins der dreieckigen, von zwei Ambulacralrinnen begrenzten Ventralfelder einer *Culcita* und seine von der Oberhaut entblösste Täfelung, so haben wir unter den uns hier entgegentretenden Platten, drei Arten zu unterscheiden, erstens die Adambulacralplatten, zweitens diejenigen Platten, welche die Adambulacralia und Marginalplatten miteinander verbinden und demnach als Arinplatten aufzufassen sind, und drittens zehn Platten,

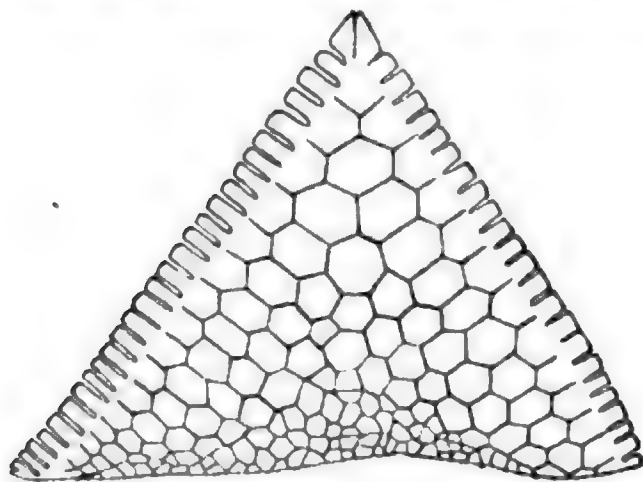


Fig. 1. Ventralskelett von *Culcita schmideliana* Retz. nach Viguiér l. c.

welche im oralen Winkel des dreieckigen Ventralfeldes liegen und dem Körper oder der Scheibe des Seesternes angehören und daher als Scheiben oder Discoïdalplatten gehen mögen (s. Fig. 2).

Die Adambulacralia sind auf der Viguiér'schen Figur

(s. Fig. 1), trotzdem sich der Autor ausdrücklich hiergegen verwahrt, schematisirt gezeichnet. Ihre in der Ventralebene liegende Oberfläche ist bedeutend kleiner als sie dort erscheint, und nur wenn man einen tiefer in der Rinne gelegenen Absatz, auf welchem die inneren Furchenpapillen ruhen, mit in diese Ebene verlegt denkt, kommt die von diesem Autor gezeichnete Grösse heraus. Die eigentliche Grösse der ventralen Oberfläche dieser Platten beträgt so viel wie die der kleinen Brachialplatten, welche an die Marginalia stossen. Die Zahl der Adambulacralia ist an dem jungen Exemplar von *C. schmideliana* (97 mm. Dm.) 45, abgerechnet die Kieferplatte, an dem grösseren Exemplare von Mauritius, 52. Davon gehören die drei ersten Paare, vom Munde aus gerechnet, der Scheibe an, der Rest den Armen, indem erst die 7te und 8te Platte durch die erste Brachialplattenreihe mit den Marginalplatten in Verbindung stehen (s. Fig. 2). Dies gilt nicht nur von *C. schmideliana* sondern auch für *C. grex* M. T. und *C. plana* Nob. und wahrscheinlich für alle andern Culcita-Arten, während verwandte Genera wie *Pentaceros*, *Pentaceropsis*, *Nidorellia* nur drei der Scheibe angehörende Adambulacralia haben, ein Unterschied, auf welchen bislang nicht hingewiesen wurde, und der *Culcita* in einen Gegensatz zu den meisten näher stehenden Formen bringt ¹⁾. Die Grösse der Adambulacralia nimmt nach dem peripheren Ende der Rinne zu ganz allmähig ab. Die ventrale Fläche der zu den Oralien umgewandelten ersten Adambulacralia liegt unter dem Niveau der allgemeinen Bauchfläche und zwar etwa so tief wie jener Absatz, der an den übrigen Adambulacralplatten die inneren Furchenpapillen trägt.

Ich wende mich nun zu den bei *C. schmideliana* äus-

1) Vollkommen übereinstimmend mit diesem Verhalten des ventralen Skelettes von *Culcita* ist das von *Goniodiscus Sebae* M. T., der einzigen Species, die ich von diesem Genus vergleichen konnte.

serst regelmässig gestellten zehn Discoidalplatten (s. fig. 2). Ihre Lagerung ist folgende. Drei von ihnen liegen in kleinen Abständen von einander entfernt im Interradius, und zwar die erste genau in dem von zwei

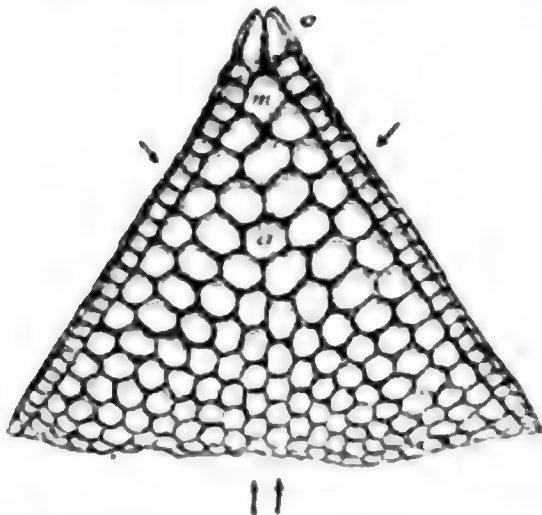


Fig. 2. Ventralskelett von *Culcita schmideliana* Retz. nach einem jüngeren Exemplare des Göttinger Museums.

o. Orale; m. Mundwinkelplatte; a. Armwinkelplatte. Die Pfeile bezeichnen die Lage der ersten Armplattenreihen.

convergirenden Adambulacralreihen gebildeten Mundwinkel; sie stösst seitlich an das erste Paar von Adambulacralplatten. Die zweite liegt zwischen ihr und der folgenden und ist quer zum Interradius etwas verbreitert. Die dritte, die als Brachialwinkelplatte bezeichnet werden möge, liegt in dem Winkel der beiden convergirenden und sich vereinigenden Brachialplattenreihen. Die erste oder Mundwinkelplatte ist,

wenigstens an dem kleinen Exemplare unsrer Sammlung, oralwärts zugespitzt und überlagert stets die Hinterenden der beiden Oralplatten. Von den übrigen sechs Discoidalplatten liegen äusserst regelmässig vertheilt je drei jederseits vom Interradius, von diesen stossen je eine an das zweite und dritte Adambulacralplattenpaar, und die noch übrig bleibende dritte liegt zwischen der Brachialwinkelplatte und der zum dritten Adambulacralplattenpaare gehörigen Discoidaltafel. Die beiden an Adambulacralia stossenden Seitenplatten richten sich in ihrer Grösse und Lagerung nach den jedesmal ersten Platte der verschiedenen Brachialreihen, welche zusammen eine der Rinne parallelaufende Reihe bilden. Zu gleicher Weise richtet sich die dritte Seitenplatte nach den zweiten Platten der Brachialreihen. Die Oberfläche der Discoidalplatten zeigt an dem jungen Göttinger Exemplare einzelne kleine, Einstichen gleichende Grübchen als Insertionspuncte von Pedicellarien,

Notes from the Leyden Museum, Vol. XIV.

übrigens ist ihre Oberfläche glatt, während an älteren Exemplaren die Ansatzpunkte der groben ventralen Tuberkel durch Grübchen kenntlich sind. Vergleichen wir das Verhalten der Discoidalplatten bei *C. schmideliana* mit dem von *C. grex* und *C. plana*, so ergibt sich im Allgemeinen die grösste Uebereinstimmung, nur besitzt, unseren spärlichen Materiale nach zu urtheilen, *C. plana*, statt drei, vier Interradialplatten und auch an dem Original-Exemplare von *C. grex* macht es den Eindruck, alsob hier statt der einen Oralwinkelplatte deren zwei vorhanden gewesen wären. Wir haben hier möglicher Weise constante specifische Merkmale vor uns, auf die genauer zu achten wünschenswerth wäre. Die Auflösung der einen Oralwinkelplatte in zwei, ist in sofern interessant, als sie möglicher Weise den Anfang eines Processes zeigt, der bei manchen *Pentaceros* Arten sich über sämtliche Discoidalplatten ausdehnte und einen Zerfall in eine Menge kleiner Täfelchen zur Folge hatte, während bei andern Species dieser Gattung derselbe noch auf die Mundwinkelplatte beschränkt ist. Erwähnt sei schliesslich dass die Gattung *Nidorellia* in Bezug auf die Regelmässigkeit und Zahlbeschränkung ihrer Discoidalplatten *Culcita* nahe steht. Sie besitzt wie *Pentaceros* nur drei zur Scheibe gehörige Adambulacralplatten, und dem entsprechend ist auch die Anzahl ihrer Discoidalplatten geringer, nämlich in der Regel vier. Die Gestalt derselben ist rund, und sie bilden ihrer Lage nach ein regelrechtes Kreuz, sodass zwei von ihnen interr radial liegen. Diese letzteren können noch um eine oder zwei vermehrt sein, im Falle, dass der Vereinigungspunct der beiden ersten Brachialreihen mehr peripherwärts liegt. Viguier hat das Skelett von *Nidorellia* nicht genauer untersucht und keine Abbildung davon gegeben. Er macht jedoch mehr nach äusseren Anhaltspuncten auf die Uebereinstimmung derselben mit *Culcita* aufmerksam, und wir werden sehen, dass sie nicht bloss für die Bauchseite sondern auch für die Rückenseite zutrifft. Charakteristisch für *Nidorellia* ist, dass die Mundwinkelplatte das

Notes from the Leyden Museum, Vol. XIV.

hintere Ende der Kiefer kaum überlagert und dadurch nur sehr wenig in den Mundwinkel hineintritt. An einer wahrscheinlich noch umbeschriebenen Species von *Puntas Arenas* (W. Ecuador), welche sich von *Nidorellia armata* vor Allem dadurch unterscheidet, dass die lophialen, apicalen, und sonstigen grossen Platten des Rückens der langen Dornen gänzlich entbehren und statt dessen Gruppen viel kleinerer und kleiner dornartiger Tuberkel tragen, entsprechen den Discoidalplatten der Ventralseite nicht drei sondern vier Adambulacralia, ein Zeichen, dass der Zahl derselben keine all zu grosse Bedeutung für die Unterscheidung der Genera beigelegt werden darf. Bemerkenswerth ist schliesslich, dass auch bei *Nidorellia* an Stelle der einen Mundwinkelplatte gelegentlich zwei vorkommen.

Viguier übergeht in seinem »Squelette des Stellérides« die von uns als Discoidalplatten bezeichneten Tafeln fast mit Stillschweigen, den Raum aber, welchen sie einnehmen,

nennt er »aire interbrachiale.« Als »Systèmes interbrachiaux« bezeichnet er die Summe von Kalkkörpern, welche je einen der 5 interradialen Septenpfeiler zusammensetzen. Diese interradialen Pfeiler sind jeder in ein mächtiges, fächerförmiges, häutiges Septum eingelagert und verbinden, indem sie die Leibeshöhle durchsetzen, das Skelett der Bauchseite mit dem der Rücken- seite. Sie schliessen sich ventral an die Oralia und die Mundwinkelplatte an. Die

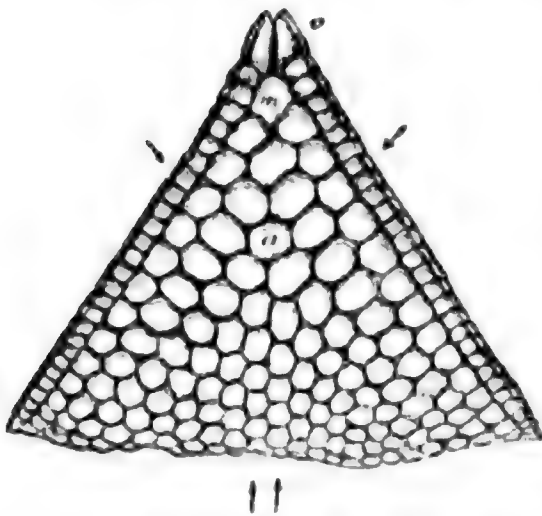


Fig. 2. Ventralskelett von *Culcita schmideliana* Retz. nach einem jüngeren Exemplare des Göttinger Museums.

o. Orale; m. Mundwinkelplatte; a. Armwinkelplatte. Die Pfeile bezeichnen die Lage der ersten Armplattenreihen.

grossen Hautseegel oder Septen, in welchen sie eingebettet sind, inseriren ventral in der ganzen Interradiallinie der Scheibe, d. h. von der Mundwinkelplatte bis an den

Winkel der ersten Brachialplattenreihen. Die Leibeshöhle durchsetzend, verbreitern sie sich derart, dass ihre dorsale Insertion etwa mal so breit ist als die ventrale, wobei ihr peripherer schneidender Rand schön eingebuchtet ist und ein grosses ovales Foramen begrenzt, durch welches, die, durch die Septen getrennten, fünf, Kammern der Leibeshöhle untereinander communiciren. Viguiet macht mit Recht darauf aufmerksam, dass bei *Culcita*, wo die »Systèmes interbrachiaux« keine feste Mauer bilden, sondern nur ein aus verschiedenen Knochenstücken zusammengefügted vertikales Band, durch dies Verhalten ein ausgiebige Beweglichkeit des Rückens gegen die Bauchseite ermöglicht sei.

Eine genauere Untersuchung der Septenpfeiler liess mein Material leider nicht zu. An seinem dorsalen Ende aber besteht er — so viel liess sich an unserm Exemplare immerhin feststellen, aus einer Anzahl sehr kräftiger Kalkkörper, während umgekehrt seine ventrale Insertion mittelst zahlreicher äusserst kleiner Stückchen geschieht. Das Studium des häutigen Septums gestattete ein gut erhaltenes aufgesägtes Exemplar von *C. novae guineae* M. T. im Stuttgarter Museum. Bei diesem ist die Erstreckung der dorsalen Ansetzung des Septenpfeilers auf das centrale Drittel des häutigen Septums beschränkt, während sie an unserm Stücke von *Culcita schmideliana* bis an die dorsale Grenze der Marginalia reicht und im ganzen 25 mm. Ausdehnung hat.

Kehren wir nunmehr zu den ventralen Platten zurück, so bleiben uns diejenigen Reihen zur Besprechung, die ich als ventrale Brachialia auffasse. Dadurch, dass sie zwischen Adambulacralia und Marginalplatten in grosserer Menge eingeschaltet wurden und zwar in einer Zahl, die am Ursprung der Arme am grössten ist, nach den Enden der Arme zu aber allmählig abnimmt, kann man sich, aus der ursprünglichen Sternform, die Scheibenform einer *Culcita* und *Nidorellia* entstanden denken, und es ist, wie ich glaube, sehr wichtig diese Platten nicht mit

Notes from the Leyden Museum, Vol. XIV.

unsern Discoidalplatten d. h. den Platten des Viguier'schen »aire interbrachiale« zusammenzuwerfen, wie es bisher geschehen ist. Die erste Brachialplattenreihe entspringt bei *C. schmideliana* vom 7ten und 8ten Adambulacrale; sie verläuft in schräger Richtung mit ihren ersten drei Platten zum Interradius, trifft hier mit der dritten Platte der correspondirenden Reihe der benachbarten Ambulacralrinne zusammen und verläuft nun parallel mit dieser und dicht neben ihr zur ersten Marginalplatte. Ihr Verlauf beschreibt mithin einen stumpfen Winkel, der jedoch zu einem leichten Bogen abgerundet ist. Die folgenden Reihen, deren Plattenzahl allmählig, d. h. nie mehr als um eine, abnimmt, verlaufen der ersten parallel. Im ganzen zähle ich an unserer Culcita 17 solcher Reihen; die letzte davon entspricht der 33sten Adambulacralplatte. Sie sowohl, wie die drei vorhergehenden, sind jedoch, da sie jede nur aus einer einfachen kleinen Platte bestehen, streng genommen nicht mehr Reihen zu nennen. Ein jeder der ersten zehn Reihen entsprechen ungefähr zwei Adambulacralia, deren Zugehörigkeit, obwohl manchmal mit äusserster Regelmässigkeit erhalten, durch Wachstumsverschiebung etwas verdeckt sein kann. Den folgenden Reihen entspricht je eine Adambulacralplatte. Am marginalen Ende aber entspricht anfangs je zwei Brachial-Reihen eine Randplatte, mit der 4ten, 5ten und 6ten Randplatte sind je drei Reihen verbunden, mit den nächsten zwei und schliesslich eine. Die vier ersten Platten dieser Reihen nehmen an Grösse gegen das Riinnenende zu ab, die mehr marginal gelegenen folgenden Platten der Reihen sind von gleichmässigerer Grösse. Nehmen wir ausschliesslich die vier ersten Brachialreihen, so finden wir, dass in jeder von ihnen die zweite Platte die grösste ist, von ihr aus aber die Grösse bis zur vierten sehr schnell, von dieser jedoch bis zur Randplatte wenig oder garnicht abnimmt. Ueberblicken wir dass ganze Ventralfeld, incl. Discoidalplatten, so bemerken wir eine Grössenzunahme der Platten gegen die Mundwinkel zu. Die Form der

Brachialplatten ist selbst an dem jungen Exemplare, bei welchem die unversehrte granulirte Bauchseite eine scharf conturirte, sechseckige Felderung zeigt, durchaus abgerundet, in den grösseren Platten mehr oval, in den kleineren, marginaler gelegenen, mehr rund; nur die an die Adambulacralia stossenden Tafeln, welche mehr oder minder quadratisch sind, machen davon eine Ausnahme. Ebenso verhalten sich die grösseren Exemplare, und nirgends berühren sich die Platten mit ihren Kanten, so dass von einer Täfelung, wie sie Viguiet abbildet (s. Fig. 1), nicht die geringste Spur vorhanden ist. Die von diesem Autor gegebene Abbildung, welche Nichts von der von mir beschriebenen Regelmässigkeit der Reihen zeigt, vielmehr eine besonders in der Randgegend ganz planlose dichte Pflasterung scharfeckiger Tafeln, erfüllt mich mit einigem Misstrauen. Dass das von mir beschriebene Verhalten mindestens das normale ist, bestätigen auch die de Loriol'schen Figuren, an welchen wenigstens die Reihenbildung sehr deutlich hervortritt. Dass die Tafeln in unserm Sinne als Reihen zusammengehören und nicht als Reihen, die parallel zur Ambulacral Rinne stehen, wie sie vielfach aufgefasst wurden, erhellt auch daraus, dass die in einer Reihe stehenden Tafeln sich mit ihren Wurzeln dachziegelartig überlagern. Sehr deutlich ist das an einem Exempl. von *C. plana* zu sehen. Die auf der Ventralfläche als Platten erscheinenden Skelettstücke haben nämlich, wie übrigens bekannt ist, durchaus nicht diese Form, sondern besitzen vielmehr eine ganz bedeutende Erstreckung in die Tiefe. Die auf der Ventralfläche zu Tage liegende Seite ist nur die Endfläche eines, bei mittelgrossen Exemplaren etwa 8 mm. langen, vierseitigen Cubus. *C. plana* unterscheidet sich darin von *C. schmideliana*, dass ihre erste Brachialreihe nur 6 oder 7 Platten enthält gegen 10 bis 11 bei der andern Art. Auch ist die Form derselben mehr durchgehends oval. Die Menge kleiner rundlicher Platten, welche bei *C. schmideliana* in der Marginalgegend liegen, fehlt hier. Auch bei *C. grex*

Notes from the Leyden Museum, Vol. XIV.

scheint die Plattenzahl der Reihen geringer zu sein als bei letzterer Art, und ihre Form ist eine viel gestrecktere als bei den zwei andern Species. Von einer Täfelung im Sinne Viguiers ist auch bei ihr keine Rede, vielmehr auch äusserlich zu bemerken, dass sich die ventralen Skelettstücke mit ihren Wurzeln dachziegelartig überlagern. Nur an einem der fünf Ventralfelder des Original Exemplars in Leyden ist die Regelmässigkeit der Lage in den ersten Reihen ein wenig gestört.

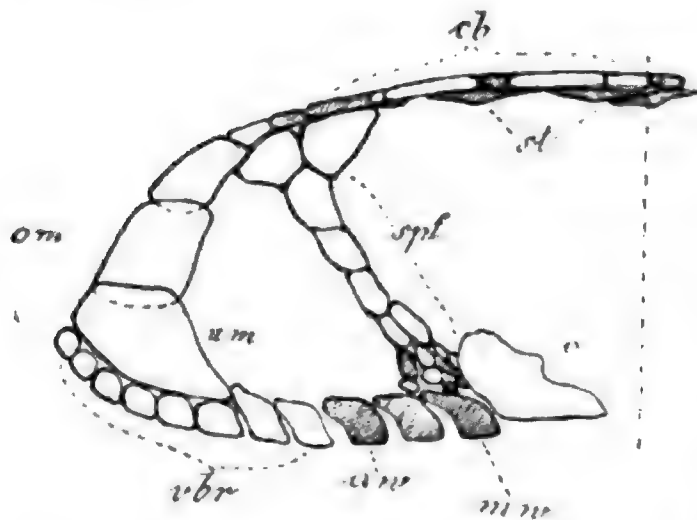


Fig. 3. Schematisirter Interradialschnitt durch das Skelett von *Culcita schmideliana* Retz.
cb. Dorsale Connectivbalken; st. Sternplatten; om. Obere Marginalplatte; um. Untere Marginalplatte; vbr. Ventrale Brachialia; aw. Armwinkelplatte, mw. Mundwinkelplatte; o. Orale; spf. Septalpfiler.

Die Marginalplatten sind nur am jugendlichen Exemplaren äusserlich erkennbar, an erwachsenen dagegen verborgen, obwohl man bisweilen an trocknen stark geschrumpften Stücken ihre Lage selbst ohne Abtragung der äusserlichen Granulation wahrnimmt. An dem von mir benutzten Exemplare des Göttinger

Museums ist übrigens die dicke äusserst schwer zu entfernende dorsale Haut so durchsichtig geworden, dass man die Randtafeln durchschimmern sieht. Sie erscheinen auf diese Art als ansehnliche Platten und zwar bei *C. schmideliana* die oberen bedeutend grösser als die unteren (s. fig. 3). Die sechs ersten Platten der oberen Reihe sind 11 mm. hohe und 2 mm. breite Tafeln, die in Zwischenräumen von etwa ebenfalls 2 mm. nebeneinander stehen. Ihre Stellung ist eine etwas zum Interradius geneigte, sodass die erste eines jeden Armes mit der ersten des anstossenden Armes nach dem ventralen Rande zu convergirt.

Notes from the Leyden Museum, Vol. XIV.

Die sechs ersten Platten sind ungefähr gleich an Grösse, und zwar liegt die sechste parallel mit dem aufsteigenden Ende der Ambulacralrinne. Auf sie folgen aber noch zwei bis vier weitere Platten, die an Grösse plötzlich abnehmen. Die unteren Randplatten, so wie sie uns äusserlich entgegentreten, sind beträchtlich kleiner und haben eine viel schrägere Stellung. Die ersten Fünf sind etwa 5—6 mm. hoch und von derselben Dicke wie die dorsalen. Sie stehen derart, dass ihr oberes Ende einem Zwischenraum der oberen Marginalplatten entspricht. Bis zu dem Punkte, wo sich die Ambulacralrinne plötzlich aufwärts wendet, halten sie in ihrer Zahl mit der oberen Reihe Schritt; von hierab aber nimmt ihre Zahl plötzlich beträchtlich zu, wobei sich ihre Grösse sehr schnell vermindert. Den vier letzten, oberen Marginalplatten entsprechen dergestalt zehn untere. An einer freigelegten Stelle unsres jungen Exemplares von *C. schmideliana* ist das Verhältniss ebenso; es entsprechen hier den fünf letzteren oberen Randplatten (die letzte davon ist nadelknopfgross) ebenfalls 10 untere. Die Gesamtzahl der unteren Platten betrug, wo ich sie zählen konnte, an dem grösseren 17, an dem kleineren Exemplare 15 für den Arm. Sowohl die 3—4 letzteren oberen, wie die ihnen entsprechenden 10—11 letzten unteren Platten, liegen mit ihren Rändern dicht aneinander, wobei die Form der sehr kleinen letzten unteren Platten ein scharf conturirt viereckige ist. Ebenso wenig nun wie die schöne Täfelung der Ventralseite aus flachen Platten besteht, so haben auch die Marginalia ihre Hauptausdehnung vertical zur Oberfläche. Sie wenden den letzteren nur ihre Schmalseite zu und stellen sich einzeln betrachtet als grosse flache Tafeln dar. Ein nur sehr kleines Stück tritt namentlich von den unteren Randplatten zu Tage (s. Fig 3). Viguiet hebt ganz richtig hervor, dass sie mit einem grossen Theile von den ventralen Platten überlagert werden. Innerhalb dieses Bezirkes sind die Brachialia bedeutend flacher als die übrigen Ossicula der Bauchseite. Was Viguiet über die Zahl der Marginalplatten von *C. schmi-*

Notes from the Leyden Museum, Vol. XIV.

deliana angiebt, stimmt mit unseren Befunden sehr wenig. Er zählt »d'un sommet à l'autre'' 16 dorsale und 22 ventrale Platten, was für den Arm oben nur 8, unten nur 11 geben würde. Von den übrigen Arten konnte ich nur *C. plana* in die Untersuchung ziehen. Bei ihr sind die nach aussen liegenden Flächen der unteren Marginalplatten etwa ebenso gross wie die der oberen. Die Zahlenverhältnisse konnte ich leider nur für die oberen feststellen, deren jeder Arm 8 besitzt.

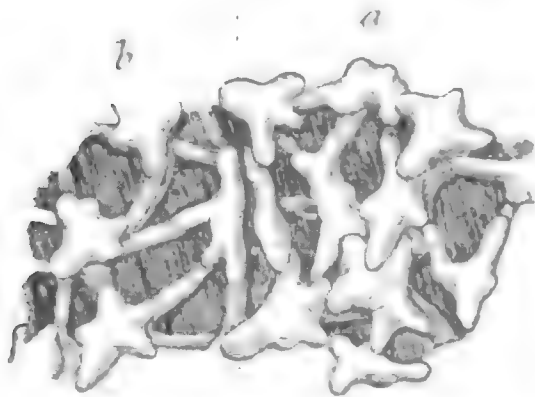


Fig. 4. Stück aus dem dorsalen Skelett von *Culeita schmideliana* Retz. von der Unterseite.
a. Centrale Region; b. Periphere Region.

Das dorsale Skelett zeigt, von der Oberseite betrachtet, ein Netzwerk von Balken. Diese bilden Gruppen von meist fünf oder sechs und strahlen von gemeinsamen Mittelpunkten aus. Unter einem jeden dieser Vereinigungspunkte liegt eine ansehnliche, unregelmässig sternförmige Platte, deren Strahlen in der Richtung

der Balken und damit genau unter diesen verlaufen, so dass sie von oben betrachtet nicht zu sehen sind. Umso mehr treten sie hervor, wenn man das dorsale Skelett von der Unterseite betrachtet (s. Fig. 4) und Viguiers Angabe ist daher auch hier irrthümlich, wenn er sagt: »La face dorsale a son squelette composé comme chez *l'Anthenea*, de gros ossicules arrondis réunies par des pièces connectives en forme de batonnets." Auch seine Figur l. c. Pl. XII Fig. 5, giebt in sofern einen falschen Begriff von dem Rückenskelett als die Connectivbalken überall gleich lang gezeichnet sind. In dem centralen Rückenfelde, welches durch eine gedachte Linie begrenzt wird, welche die centralen Enden der dorsalen Ansätze der Septenpfeiler mit einander verbindet, ragen nämlich die Balken nicht über die Enden der Sternplatten hinaus, sodass letztere sich

gegenseitig berühren, ausserhalb aber des Central- oder Apicalfeldes liegen die Sternplatten weit aus einander und werden nur durch die hier viel längeren Connectivstücke verbunden. Das aus Sternplatten und Balken gebildete Netzwerk, tritt übrigens nicht bis dicht an die Marginalia, und der Raum zwischen ihm und den letzteren wird ausgefüllt durch Platten, welche bei unserem Exemplare fasst einer dritten Marginalplattenreihe gleichen; dieselben haben namentlich gegen das Ende der Ambulacralrinne zu auch die Form der oberen Randplatten; sie entsprechen diesen auch annähernd in der Zahl und bilden, was ihre Stellung betrifft, nicht selten die directe Fortsetzung derselben. Sie sind mehr noch als diese schräg zum Interradius gestellt, und da dies Verhalten sich steigert, je näher die Platten der Ambulacralrinne liegen, so ist ihre Lage oberhalb des Rinnenendes eine zum Radius vollkommen quere. Diese Tafeln sind wahrscheinlich als dorsale Brachialia aufzufassen. Den lophialen Tafeln anderer Gattungen entsprechend, haben wir schliesslich noch einer geringen Zahl von Tafeln zu gedenken, die genau radial, also in der dorsalen Verlängerung der Ambulacralrinne gelegen sind. Es sind schmale, quer zum Radius verlängerte, vertical stehende Tafeln, die in geringer Entfernung vom Ende der Rinne in die Sternform übergehen. Der dorsale Ansatzpunkt der Septenpfeiler (»Systèmes interbrachiaux" Viguiet) erstreckt sich von der dorsalen Grenze der oberen Marginalplatten 25 mm. centralwärts, nimmt also die Hälfte der Strecke zwischen diesen und dem Centrum ein. Von Interesse ist, dass sich *Culcita* der nahe verwanten Gattung *Nidorellia* auch durch die beiden gemeinsame Sternform der dorsalen Platten nähert. Bei dieser besteht das dorsale Skelett ausschliesslich aus zahlreichen Sternplatten, die sich mit ihren Spitzen berühren und überlagern. Die Balken fehlen hier gänzlich.

Bezüglich der Ambulacralia und Adambulacralia, sowie der Oralia und des Odontophors, kann ich die Viguiet'schen Angaben bestätigen.

Notes from the Leyden Museum, Vol. XIV.

Fassen wir nochmal kurz die Ergebnisse über das Culcita-Skelett zusammen, so haben wir für die Bauchseite die strenge Unterscheidung von Brachialplattenreihen und Discoidalplatten befürwortet und deren äusserst regelmässige Anordnung dargethan, für die Rückenseite eine centrale und eine periphere Region unterschieden und die eigenthümlichen Sternplatten kennen gelernt, welche in ersterer sich untereinander berühren, in letzterer durch die Vermittlung von besonderen Balken mit einander in Verbindung treten. Die Sternplattenregion stösst aber nicht, wie es bei *Nidorellia* der Fall ist, direct an die oberen Marginalplatten, sondern ist von diesen durch eine besondere Reihe vertical stehender grosser Platten getrennt.

Zum Schlusse möchte ich alle Denen herzlich danken, die mich mit Material unterstützten; vor Allem Herrn Geheimrath Ehlers, der mir freundlicher Weise die Praeparation einiger Stücke des Göttinger Sammlung gestattete, sodann den Directoren der Museen von Berlin, Bremen, Hamburg, Lübeck, Stuttgart, Utrecht. Für die Anfertigung von 3 Figuren bin ich Herrn Martin Schmidt, Assistent am geologischen Institute hierselbst, verpflichtet.

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Göttingen, 18 Februar 1892.

NOTE XX.

ON SEMNOPI THECUS PYRRHUS HORSFIELD

BY

Dr. F. A. JENTINK.

January 1892.

(Plates 3 and 4).

Specimens belonging to this species are very rare in Zoological collections, the only specimens to be found in Musea are, as far as I am aware, the type-specimens in the British Museum from Horsfield's collections from Java, and a nearly adult male in the Leyden Museum collected in 1860 by Professor de Vriese, with the exact locality, district Batou, Passarouan-residence, East-Java.

In his well known »Simiae" Schlegel observed that *S. pyrrhus* is distinguished from *S. maurus*: »parce qu'il garde, »pendant toute son existence, la teinte d'un roux-rouge »propre au très jeune âge, teinte qui change, dans le »*S. maurus*, de très bonne heure, au noir; puis qu'il a »les ongles d'un jaune blanchâtre et non pas bruns."

Professor Hubrecht on his journey in the Malayan Archipelago had the good luck to come across several specimens of this species and has brought home skins of an adult, of a half-grown and of a young individual, besides skeletons. They have been collected close to the locality where Professor de Vriese procured the above mentioned specimen, namely in the Bezoeki-residence, between Djember and Poeger.

I have nothing to add to Schlegel's description of the color of the specimens, old and young presenting the typical red, somewhat lighter however because they have been preserved in spirits. According to the value ascribed

Notes from the Leyden Museum, Vol. XIV.

to the red color of the animal the different authors have followed Horsfield and accepted the distinction of *S. pyrrhus* from *S. maurus*, like J. E. Gray, 1843 (List of the specimens of Mammalia, a. s. o. p. 3) and Schlegel, 1876 (Catalogue, Simiae, p. 56), or classed it as a variety of *S. maurus*, like J. E. Gray, 1870 (Catalogue of Monkeys, Lemurs, a. s. o. p. 15), J. Anderson, 1878 (Anatomical and Zoological researches, a. s. o. p. 28) and 1881 (Catalogue of Mammalia in the Indian Museum, part I, p. 47), but nobody ever has tried to compare the skulls of *S. maurus* and *S. pyrrhus* and, in my view, this would have been the finishing stroke.

I now possess a rich material to study the skulls and to compare the bony parts, viz: four skulls belonging to individuals of different age and two skeletons of *S. pyrrhus* and a large lot of skeletons and skulls of *S. maurus*. In comparing the skull of an adult male of *S. pyrrhus* with that of an adult male of *S. maurus* (plates 3 and 4) it appears at a glance that the former is much more prognath, resulting from the greater development of all the teeth and of the mandibles: the canines are of a much larger size and the molars are stouter and stronger: very surprising is the different form of the anterior part of the lower mandibles, high and more or less as it were truncated in *S. pyrrhus*, lower and sloping in *S. maurus*. Among others there is to observe a very striking difference in the extent of the bony palate, being in *S. maurus* much smaller than in *S. pyrrhus* (plates 3 and 4, figs. 1 and 3) and less protruded backward.

	<i>S. pyrrhus.</i>	<i>S. maurus.</i>
	Mm.	Mm.
Length of upper molar series . . .	29 . . .	27
» » lower » » . . .	36 . . .	33
Greatest dimension of lower jaw .	74 . . .	70
Length of bony palate	39 . . .	32,5
Skeleton with 12 dorsal-, 7 lumbar-, 3 sacral- and 27 caudal vertebrae.		

Notes from the Leyden Museum, Vol. XIV.

In conclusion *S. pyrrhus* and *S. maurus* are two well-defined species, differing — although their covering in young state bears about the same reddish color — by the color of the fur and by their bony parts; moreover there is a peculiar difference in their characters: Horsfield already stated that the *Lutung* (*S. pyrrhus*) is a favourite among the natives; whenever an individual is obtained, care is taken to domesticate it, and it is treated with kindness and attention; the *Budeng* (*S. maurus*) on the contrary, is neglected and despised and it requires much patience in any degree to improve the natural sullenness of its temper; in confinement it remains during many months grave and morose, and as it contributes nothing to the amusement of the natives, it is rarely found in the villages or about the dwellings. This does not arise (said Horsfield) from any aversion on the part of the Javanese to the monkey race: the most common species of the Island, the *Cercocebus Aygula* of Geoffroy, the Egret Monkey of Pennant (*Cercocebus cynamolgos*) is very generally domesticated, and a favourite custom of the natives is to associate it with the horse. In every stable, from that of a Prince to that of a Mantry, or chief of a village, one of these Monkeys is found; but I never observed the *Budeng* thus distinguished.

NOTE XXI.

PITHECHIR MELANURUS S. MÜLLER

BY

Dr. F. A. JENTINK.

February 1892.

(Plates 3 and 4).

Mr. J. D. Pasteur, well-known to the readers of our „Notes” (cf. Notes from the Leyden Museum, 1890, p. 209), having removed from Padang Sidempoean (Sumatra) to Batavia (Java), wrote to me to send him over a colored drawing of *P. melanurus*, for in the possession of it he dared say that he could procure specimens, if the species truly was to be found on the Goenong Gedeh. After having received the desired drawing he had neither rest nor repose until he had kept his word. And indeed on December 3, 1891 I received a postcard d. d. November 3, with the good news, that in his possession were two living adult specimens, ♂ and ♀, the latter with a half grown young, captured on the northern slope of the Goenong Gedeh and that he intended to send them over preserved in spirits as soon as possible.

Dr. Sclater was kind enough to communicate Pasteur's discovery to the members of the Zoological Society in the meeting of January 5.

A couple of days afterward I received a letter in which Mr. Pasteur gave an account of the troubles he had to overcome before he got the said specimens, the way how they have been captured and their behavior in confinement.

I think it to be full of interest to naturalists if I hereafter give a translation of a part of the named letter,

Notes from the Leyden Museum, Vol. XIV.

this at the same time will show to our zealous and disinterested correspondent how highly we esteem and appreciate his observations.

Pasteur related as follows: »Although Mount Salak, as »nearer to Batavia, offered a much better field to an entomologist, I chose the »Kampong" Toegoe (1300 meters »above the level of the sea) for my entomological excursions, solely to investigate after *Pithechir melanurus*. Toegoe is the most remote spot on the slope of the Gedeh »where I could rather easily come with a little cart. And »so I travelled every sunday or every fortnight 174 kilometers — 120 K. M. by railroad and 54 K. M. by cart »with three horses — to spend at Toegoe four or five »hours with my favorite occupation. Having your colored »drawing always with me I showed it again and again to »numerous natives, giving them rixdollars and instructions. »In short, I saw the first specimen of this interesting »species on October 31. It was half past eight in the »evening and quite dark. Dozing I sat down in my little »cart slowly pulled by the panting horses along the steep »slope of the mountain, as I heard a native crying: »toewan, saja dapet itoe tikoes"! (Sir, I have captured the »rat!) and at the same time he in triumph showed to me »in the light of the lantern one of the iron rat-traps, »which I had given him, wherein I saw the large white »bellied red rat frightened climbing round about! — My »native hunters, having a longing for the promised premium, rambling day after day along the steep uncultivated slopes of the Gedeh, believed a certain day to »remark the red rat running upon a branch of a high »*rasamala* ¹⁾ - tree and saw it disappear in what seemed to »be a large nest. One of them mounted on the tree, but »it was an impossibility to reach the nest: so they resolved to destroy the nest with a long stick by which the »frightened animals would be forced to drop down. And

1) *Liquidambar altingia*.

»this perfectly succeeded; for two adult specimens, ♂ and
 »♀ with a half grown young came down happily unhurt
 »and were captured. Six days afterwards I came to Toe-
 »goe and found them living and feeding with fruits of
 »the earth, especially fruits of the sole like *oebi* ¹⁾ and
 »*katèla* ²⁾. I had no opportunity to make out if they too
 »are insectivorous, and as yet believe — like my hunters
 »do — that they have a vegetable diet. The young spe-
 »cimen always uninterrupted was suckling and concealed
 »its head continually under the abdomen of the mother;
 »in the same position it did sleep and was carried along
 »by the mother. In two iron rat-traps I brought them
 »over to Batavia, where however their appetite diminish-
 »ed partly by the very high temperature (85°—90° F.),
 »partly because I could not procure the small and delicate
 »granular *oebi* from Toegoe: the coarse *katèla* from Bata-
 »via however they consumed with taste, so *kelimoen* (cu-
 »cumbers) too and fruits like *pisang* ³⁾ and *manggistan* ⁴⁾,
 »but fresh carrots they did not touch. As a rule they
 »passed the day sleeping, in the evening they grew rest-
 »less and in the morning nearly always the food had dis-
 »appeared, so that the conclusion is permitted that they
 »are nocturnal animals.

»The iris is as black as jet; the feet and fingers, as
 »far as they are thinly haired or not haired at all, are
 »of a flesh-color like indeed in the existing colored draw-
 »ing; the callosities on the soles of the feet are white
 »as chalk, the soles however have a somewhat reddish
 »flesh-color tinge."

So far the interesting notices made by Mr. Pasteur, by
 which we now may state that we know more about the
 biology of this very rare red rat than we ever heard about
 hundreds other mammals since long represented in every

1) Genus *Dioscorea*.

2) *Batatas edulis*.

3) *Musa*-species.

4) *Garcinia mangostana*.

Museum, so that we congratulate Mr. Pasteur with the splendid work he has done.

The color of the fur a. s. o. I described in "Notes from the Leyden Museum, 1890, p. 227"; I only have to add that the red color has not the yellow tinge like in Cuvier's figure, but is of a beautiful chestnut tinged red; the hairs of the belly are pure white in the young specimen (slightly tinged with reddish in the adult individuals) like in the old Java-specimen in our Museum; the tail is very hairy towards its root for about 25 Millimeters: for the rest it *looks* smooth like a snake's skin: the scales (8 to 10 pro Centimeter) are very dark brown colored, so that the specific title *melanurus* has "raison d'être" and my hypothesis (l. c. p. 227) that in our old dried Museum-specimens the tail had been decolored, was quite right; there are very short dark colored hairs — very difficultly conspicuous without the aid of a lens — regularly spread between these scales (plate 3, fig. 8): the midmost is slightly longer than the two others, the latter reaching about halfway the height of a scale; towards its tip the tail is about without hairs, the scales of that part are very small and few in number and bear a much lighter brownish white color; the extreme point of the tail is destitute of hairs, very smooth and purslain white.

Whiskers black throughout, much longer than the head, very numerous; the longest measure about 63 Millimeters.

The strongly rounded oval ears are sparingly clothed with short hairs; upper margin fringed with rather long hairs.

Size and shape of hands and feet will be clear from the drawings (plate 3, fig. 5 and plate 4, fig. 6), the nails are short, well arched and very acutely pointed, brownish white; the nail of the rudimentary thumb of the hand is very small and obtuse like that of the thumb of the hind foot, which nail is however stronger.

The female has four strongly (their young was suckling) developed inguinal nipples. The clitoris is extraordinarily

large: in the adult female it measures 11,5 Millimeters (exactly the size and shape of the penis of the adult male) so that I at first mistook the young individual for a male, as this suckling young has a clitoris measuring 6 Millimeters: the four small nipples are clearly visible.

Some measurements (in Millimeters) of the ♂, ♀ and young ♀ preserved in spirits:

	♂	♀	young ♀
Length of head and body	180	200	130
Nose to eye	21	22	16
Eye to ear	14	16	10
Ear	15,5 × 14,5	17 × 15	14 × 14
Length of tail	193	210	128
> fore foot with claw.	16	17	15
> hind foot.	31	32	26

The skull and teeth agree with the figures published in N. L. M. 1890, plate 9, figs. 1—4, so that it appears that I was correct when I referred these skulls to our old stuffed specimens of *Pithechir melanurus* (l. c. p. 226).

The palate-ridges (plate 4, fig. 7) bear some interest as they widely differ from those on the palate of the greatest part of the other *Muridae* known to me.

The skeleton presents 13 costales, 6 lumbares, 4 sacrales and 37 caudales.

NOTE XXII.

ON ORTHRAGORISCUS NASUS, RANZANI.

BY

Dr. Th. W. van LIDTH de JEUDE.

(Plate 5).

In volume XII of this periodical I described a large specimen of *Orthrageriscus* captured on our coast at Ameland in Dec. 1889, and called attention to the differences in the various descriptions to be found of this species of fishes. In the end of November of last year another specimen was washed ashore at Callantsoog on our coast and was, through the kindness of Dr. P. P. C. Hoek director of the Zoölogical Station at Nieuwediep, presented to the Leyden Museum. Though a large one this specimen is not so gigantic as our former one. The dimensions are as follows:

Distance from tip of snout to extremity of tail.	M 1.23
Distance from root of dorsal fin to root of anal fin, measured at their anterior side	M 0.76
Distance from root of dorsal fin to root of anal fin, measured at their posterior side. . . .	M 0.64
Distance from top of dorsal fin to top of anal fin.	M 1.62
Distance between tip of snout and anterior side of the root of dorsal fin.	M 0.77
Distance between tip of snout and anterior side of the root of anal fin	M 0.87
Distance from tip of upper jaw to anterior side of the root of pectoral fin	M 0.40
Distance from tip of snout to anterior side of the root of pectoral fin	M 0.43
Distance between tip of upper jaw to centre of the eye	M 0.19 ^s
Distance between tip of snout to centre of the eye.	M 0.22 ^s

Our specimen is a male and weighed about 90 Kg.

In two points this *Orthrageriscus* differs from that captured at Ameland viz. 1°. in having a prominent snout or proboscis, wanting in the other specimen; 2°. in the nature of the band between body and caudal fin.

Notes from the Leyden Museum, Vol. XIV.

The proboscis protuding above the mouth ends in a strongly developed osseous tubercle and passes into a very decided swell on either side over the eye; just over and a little behind the eye this swell is most prominent, further on it decreases and entirely loses itself a little before the pectoral fin.

In this way is formed at the back, as it were a crest, extending from just before and over the eye as far as the root of the dorsal fin. Behind the pectoral fin are seen parallel longitudinal folds, the most marked ones pretty near in the middle, running straight on in the direction of the eye. On the animal being skinned, these folds were found to be local swellings of the skin.

As to the band between body and caudal fin, so clearly visible in our Ameland specimen, it is almost invisible in the smaller one from Calantsoog and might even be overlooked. There are no deep grooves to be seen and the skin of the band is all over set with the little pricks caused by the dermal ossifications.

In having a snout, and longitudinal folds behind the pectoral fin as well as in presenting the slight band between body and caudal fin our specimen quite agrees with Harting's *Orthrageriscus ozodura* and Steenstrup's *Mola nasus*. On the score of these characteristics, more fully developed in Note 32 volume XII, I think it better to separate this species from the *Ortrageriscus mola* L., of which our Ameland specimen may be regarded as a representative, and call it *Orthrageriscus nasus* after Ranzani's description of *Diplanichias nasus*.

Our specimen is of a brownish colour, overlaid with a silvery tinge, particularly at the lower parts, and was covered all over with round and elliptical bright spots.

The figure added to this note was made after a photograph taken by Dr. Hoek's care, and may give a sufficient clear idea of the exterior of our fish, especially of the snout; moreover our specimen is carefully stuffed and preserved in the collections of our Museum.



JAN PIETER VAN WICKEVOORT CROMMELIN.

On October 20th last died at Haarlem the Dutch Ornithologist Dr. juris Jan Pieter van Wickevoort Crommelin at the age of nearly 61 years.

His love for the birds of his country dated from his early boyhood, but the interest in regular ornithological studies was awakened in him by the well-known Zoologist Temminck, an old friend of his father, during the years he passed as a *studiosus juris* at the Leyden University. Encouraged by Temminck, who introduced him to the Leyden Museum, Crommelin decided, after having taken his degree of Doctor of Laws in 1852, to devote a whole year exclusively to the study of zoology under the able direction of Professor van der Hoeven.

Being independent as regards pecuniary matters, he felt no inclination to enter either the career of a lawyer or a politician, and could therefore the more easily devote his time to collecting and studying the birds of his country. His collection increased very rapidly, and with an extraordinary zeal and perseverance he has, during nearly forty years, brought it to such a standard that it may unhesitatingly be said to contain almost all the species of birds hitherto observed in the Netherlands. Most of the species are represented by large series of very carefully selected, and splendidly stuffed and preserved specimens. In this collection of about 2000 specimens a large number of very rare species are represented. Amongst these the attention of

Ornithologists may be called to the following:

Milvus migrans (Bodd.).

Turdus obscurus Gm. juv.; Oct. 27th 1843, near Haarlem.

Anthus richardi Vieill. ♂ juv.; Oct. 24th 1890, The Hague.

Loxia bifasciata (Brehm), two males; North Holland.

Ardea ralloides Scop. adult; July 1830, Schollevaers Eiland.

Ibis falcinellus (L.), ♀ jun.; Oct. 30th 1873, Overijssel.

Otis tarda L. male; March 7th 1855, Dordrecht.

Otis tetrax L. two females, shot on December 28th 1853 in Gelderland, and January 28th near Alkmaar.

Rallus parvus Scop. ♂ juv.; September 9th 1872, Overijssel.

Numenius tenuirostris (Vieill.), male; December 5th 1856, near Haarlem.

Fuligula rufina (Pall.), five specimens from the Naarder Meer near Amsterdam.

Moreover, as hardly need to be said, his collection contains whole series of *Ampelis garrula*, *Nucifraga caryocatactes*, *Syrrhaptes paradoxus* and others, all obtained during their respective invasions in the Netherlands.

A complete list contains ample informations about each of the specimens obtained. His collection has furnished a great number of facts mentioned in »Bouwstoffen voor eene Fauna van Nederland», and many valuable contributions from his hand are contained in the »Archives Néerlandaises» and in »Nederlandsch Tijdschrift voor de Dierkunde», while many of his most interesting observations have been recorded by Dr. Herman Albarda in his annual reports (Ornithologisch Jaarverslag) which are published in »Tijdschrift der Dierkundige Vereeniging».

Crommelin was much interested in the occurrence of hybrids, especially among Ducks, and several very interesting cases of interbreeding were treated of by him in the above mentioned periodicals.

The value of all that has been done by this zealous Ornithologist will, however, be enhanced when we consider that, already during his academical studies, he suffered much from a disease of his eyes, which rapidly became worse,

Notes from the Leyden Museum, Vol. XIV.

until, at the end of a few years, it resulted in total blindness.

With the aid of an able and trustworthy servant, who, though ignorant of foreign languages, had to read to him the ornithological publications in the different languages, and to assist him in his work, he was able to help himself even in the most intricate ornithological questions, and acquired in course of time a wonderful aptitude for recognizing his birds by feeling especially the bill and feet. It was very seldom that the slightest aberration escaped him, either in coloration or form.

Crommelin was not only a thorough student of the birds of his own country, but of general European Ornithology as well. He was, moreover, a man whose knowledge was built on a very broad base. Being very well acquainted with foreign languages, he showed a lively interest in Botany and other branches of Natural Science. His blindness he bore patiently, and his modesty and amiability in conversation with others were highly esteemed by all who were fortunate enough to belong among the number of his acquaintances.

That his modest work was duly appreciated by his Dutch fellow Zoologists, is clearly proved in a necrology from the pen of his friend Dr. Herman W. de Graaf, published lately in *„Tijdschrift der Dierkundige Vereeniging”*, 1891, p. 81.

According to his wish, the whole collection of the able Ornithologist was, after his death, presented to the National Museum at Leyden, where it will find its place in a special gallery as the stock of a separate collection representing the Ornis of the Netherlands, and be a worthy monument to a worthy Dutch Naturalist.

Leyden Museum, January 1892.

J. BÜTTIKOFER.

NOTE XXIII.

ON A CHESTNUT- AND BLACK WEAVER FINCH
FROM SUMATRA

BY

J. BÜTTIKOFER.

While occupied with a revision of the genus *Munia* in the Leyden Museum, I met with two specimens of black-headed chestnut-brown specimens from Sumatra. One of them is said to be a male, the other a female, and both are making the impression of adult birds. Both specimens, as far as I am aware the first ones of this group ever recorded from Sumatra, are the representatives of *Munia atricapilla* (Vieill.) from the Indian Continent and Malacca but may be easily distinguished from the latter and also from the Bornean birds by the abdomen, vent and under tail-coverts being maroon-brown instead of black. In the female some of the feathers on these parts are tipped with sooty brown. Another distinguishing character is the straw-yellow tinge of the central pair of tail-feathers and the tips of the longest upper tail-coverts. Besides these two specimens our collections contain another brown-bellied specimen from Canton (China) which only differs from those from Sumatra in having no straw-yellow on the tail. This specimen showing evident marks of its having been kept in captivity, it is not out of doubt whether it is of real Chinese origin or not.

It would be worth the trouble to make out with the aid of numerous specimens, if in the Sumatran representatives of this group this peculiar character is constant, as in this case they would belong to Edwards' „Chinese sparrow" = *Amadina sinensis* Gray (see Sharpe, Cat. B. Br. Mus. XIII, p. 334, footnote).

Leyden Museum, April 1892.

Notes from the Leyden Museum, Vol. XIV.

NOTE XXIV.

OBSERVATIONS SUR LES STENOPHIDA
LINEARIS, PASC. ET OXYOPISTHEN SUTURALE, ROEL.
(STENOPHIDA TRILINEATA, AURIV.)

PAR

W. ROELOFS.

Lors de ma notice sur les genres du groupe des *Oxyopisthen* ¹⁾ je ne connaissais le genre *Stenophida* et son espèce typique, *S. linearis* Pasc., que par la courte description qu'en donne l'auteur ²⁾.

Cette espèce était restée également inconnue à Mr. Aurivillius lors de ses travaux sur ces insectes ³⁾.

Or, Mr. Neervoort van de Poll a trouvé tout récemment, parmi les insectes non déterminés de sa collection, l'espèce en question, ce qui m'a permis de l'examiner et de le comparer à mon *Oxyopisthen suturale* (*Stenophida* (?) *trilineata* Auriv.).

La description donnée par Mr. Pascoe avait fait supposer à Mr. Aurivillius que son *trilineata* pourrait peut-être faire partie du genre *Stenophida* Pasc., tout en ajoutant qu'un examen ultérieur indiquerait peut-être des caractères qui forceraient de séparer génériquement ces insectes.

Après avoir étudié l'espèce de Mr. Pascoe, je ne doute pas qu'il en soit ainsi. — Ce qui frappe surtout dans *S. linearis*, est l'étroitesse de l'insecte, tandis que *O. suturale* Roel. se distingue des espèces voisines par sa forme plus large et ovale. J'ai donné le nom de *Platyopisthen*

1) Notes Leyd. Mus. XIV (1892), p. 33.

2) Journ. Linn. Soc. Lond. XIX (1886), p. 336.

3) Öfvers. af Kongl. Vetensk.-Akad. Förhandl. 1891, n° 6.

au genre dont *Oxyopisthen suturale* Roel. (*Stenophida* (?) *trilineata* Auriv.) devient l'espèce typique. Pour bien indiquer la différence des deux genres entre eux et les genres du même groupe, on peut établir leurs caractères comme suit :

Stenophida Pascoe.

Corps linéaire, assez convexe.

Rostre plus gros à la base que dans le reste de son étendue, un peu étranglé à son origine.

Antennes plus sensiblement coudées que dans les genres du groupe des *Oxyopisthen*, assez grosses en proportion de leur longueur; scape atteignant tout au plus le bord antérieur du prothorax, plus court que le funicule; premier article de celui-ci un peu plus long que les suivants, massue assez forte, triangulaire.

Yeux séparés en dessous.

Prothorax environ d'un tiers plus long que large, sa base un peu avancée au dessus de l'écusson, parallèle sur les côtés.

Écusson linéaire.

Elytres de la longueur du prothorax, pas plus larges que lui.

Pygidium déclive suivant une ligne courbe.

Deuxième segment de l'abdomen séparé du premier par une suture superficielle, plus long que les deux suivants réunis; les sutures de ces derniers très profondes.

Jambes fortement mucronées.

Dernier article des tarsi long, ses crochets divariqués.

Vestiture écailleuse, consistant en écailles piliformes assez grandes.

Platyopisthen Roelofs.

Ovale-allongé, peu convexe.

Rostre à peine grossi à la base.

Scape des antennes un peu élargi en massue à son extrémité, aussi long que le funicule, dépassant le bord antérieur du prothorax; deuxième article du funicule plus long que le premier.

Notes from the Leyden Museum, Vol. XIV.

Yeux à peine séparés en dessous.

Prothorax en cône tronqué, fortement bisinué à sa base.

Ecusson cordiforme.

Elytres de la largeur du prothorax à leur base, se rétrécissant graduellement vers le bout.

Pygidium faiblement déclive, peu convexe, triangulaire, tronqué chez le ♂, prolongé en pointe, un peu relevée, chez la ♀.

Jambes armées d'un mucro très robuste.

Dernier article des tarsi long, ses crochets séparés; l'avant dernier article à peine échancré.

Deuxième segment de l'abdomen aussi long que les deux suivants réunis.

Vestiture consistant en une pilosité extrêmement fine ¹⁾.

Je pense que ce genre est plus voisin des autres genres du groupe des *Oxyopisthen*, que *Stenophida*.

Pour ce qui concerne l'espèce typique de ce dernier genre, *S. linearis* Pasc., j'observe que chez l'individu que j'ai sous les yeux, les côtés du métasternum sont garnies d'écailles assez grosses, blanchâtres, qui s'étendent sur le premier segment de l'abdomen; le pygidium en est garni en dessus et son extrémité en dessous. Dans la description de Mr. Pascoe, je lis seulement „at the sides pitchy”. L'individu que Mr. Pascoe avait sous les yeux était probablement un peu usé.

L'individu de la collection Neervoort van de Poll provient de Mr. Raffray et est originaire de Momboua, près de Zanzibar.

Cette provenance, très éloignée de celle des genres du groupe des *Oxyopisthen*, rend la proximité systématique du genre et de ces derniers encore peu probable ²⁾.

La Haye, Mars 1892.

1) La nature de la vestiture des espèces dont il est question ici, est tout à fait différente; elle est dans bien des cas très caractéristique des genres.

2) Mr. Pascoe compare le faciès de *S. linearis* à celui des espèces du genre *Periphemus*. J'ai vu depuis ma notice une espèce de ce dernier genre, probablement *P. retrorsus* Pasc., qui ressemble en effet beaucoup au *Stenophida linearis*.

NOTE XXV.

DESCRIPTION D'UN NOUVEAU GENRE ET D'UNE
NOUVELLE ESPÈCE DE CURCULIONIDES DE LA TRIBU
DES ULOMASCIDES

PAR

W. ROELOFS.

Büttikoferia, n. g.

Corps déprimé, allongé.

Rostre et tête fortement déprimés, subhorizontaux; le premier droit, continu avec la tête, un peu concave en dessus, légèrement rétréci en avant et déclive à l'extrémité; scrobes entières, très larges et profondes, dirigées sous les yeux et continuant derrière eux, visibles d'en haut vers l'extrémité du rostre par la saillie de leur lèvre inférieure. Le rostre est légèrement échancré en arc sous la bouche. Les mandibules assez grandes et arquées.

Antennes insérées près de l'extrémité du rostre, assez longues et grêles, leur scape couvrant les yeux; funicule de sept articles, le premier un peu plus gros et plus long que le 2^e, les suivants graduellement plus courts et un peu plus gros, le 7^e de nouveau un peu plus long; massue articulée, allongée.

Tête fortement et subitement rétrécie derrière les yeux qui sont ovales, saillants et granulés.

Prothorax en carré transversal, coupé aux angles.

Ecusson irrégulièrement ovale, transversal.

Elytres à peine plus larges que le prothorax, leurs épau-les arrondies, du double plus longues que larges, presque parallèles sur les côtés, arrondies au bout.

Notes from the Leyden Museum, Vol. XIV.

Métasternum fortement déprimé en arrière, avec une ligne imprimée dans la dépression.

Premier segment de l'abdomen de la même longueur que les deux suivants, et séparé du 2e par une suture droite.

Hanches distantes, surtout les deux paires postérieures; cuisses un peu en massue, les antérieures plus grosses et courbées sur leur tranche supérieure, toutes latéralement comprimées, tranchantes en dessous, anguleusement dentées vers l'extrémité, évasées de la dent jusqu'au bout; jambes inermes, comprimées. Les deux premiers articles des tarsi très petits, le 3e grand, divisé en deux lobes étroits, oblongs, et spongieux en dessous; le 4e article grand, ses crochets robustes, fortement divariqués.

Saillie de l'abdomen faiblement anguleuse.

Büttikoferia liberiensis, n. sp.

Long. 11 millim. — D'un brun marron plus foncé sur les élytres, luisant en dessous.

Rostre couvert d'une ponctuation striolée et garni d'une pilosité courte, fine, jaunâtre; le bout du rostre est un peu noirâtre; les mandibules noires. Les côtés du rostre sont limités par une carène partant de dessus des yeux et graduellement moins élevée vers l'extrémité; la bouche est entourée de cils jaunes. La tête présente une dépression entre les yeux. Les antennes sont garnies d'une pubescence jaunâtre, plus longue sur le funicule, la massue est couverte d'une pubescence courte jaunâtre.

Prothorax très peu convexe, presque parallèle sur les côtés, ses angles coupés, les bords du disque un peu relevés, celui de la base un peu saillant aux extrémités. Le prothorax est légèrement échancré en avant et faiblement bisinué à la base; ces deux extrémités sont noirâtres; il est couvert d'une ponctuation serrée, confluyente sur les côtés, et d'une fine pubescence, peu apparente; il est un peu déprimé aux angles antérieurs. L'écusson est garni d'une pubescence pareille à celle du prothorax.

Notes from the Leyden Museum, Vol. XIV.

Elytres isolément arrondies à la base, garnies de stries de points, les intervalles des stries sont finement ridés. A la base, vers le 5^e intervalle, se voit une élévation peu marquée; le bout des élytres est arrondi.

Le dessous du rostre est luisant et présente à la base, un espace triangulaire, nettement limité, garni d'une pubescence courte, jaune, très serrée, offrant l'apparence d'un coussinet. Dessous luisant, garni comme les pattes d'une pubescence fine, jaunâtre. Le dernier segment plus densément garni de poils.

Un individu du Musée de Leyde, provenant du voyage de M. M. Büttikofer et Stampfli à Libéria.

Par la comparaison de ma description de mon genre *Büttikoferia*, avec les descriptions du genre *Ulomascus*, par Mr. Fairmaire (Ann. de la Soc. Ent. de France, 2^e série, Tome VI, 1848, p. 173 et suivants, avec figure) et par Lacordaire (Genera des Coléoptères, Tome VII, p. 185) on verra que les caractères que je donne au genre nouveau, diffèrent à peine de celles que les deux auteurs donnent au genre *Ulomascus*; ces différences m'ont paru cependant assez grandes pour séparer génériquement *Ulomascus caviventris* Fairm. de ma nouvelle espèce. Le faciès des deux insectes diffère du reste sensiblement à juger d'après la figure de Mr. Fairmaire. Chez la nouvelle espèce le rostre est plus long, le cou de la tête plus étroit, la forme du prothorax et des élytres est différente. Autant que j'ai pu juger de la construction de la bouche, elle est échancrée en dessous, comme celle de *Ulomascus* décrite par Lacordaire, et les mandibules sont arquées. Lorsqu'on aura trouvé de nouveaux individus de ces insectes, on découvrira peut-être des sexes différents et, s'il en existe, d'autres espèces; leur examen fera mieux connaître l'analogie des deux espèces, remarquables par leur forme aberrante.

La Haye, Avril 1892.

Notes from the Leyden Museum, Vol. XIV.

NOTE XXVI.

THE SPECIES OF LUCANOID COLEOPTERA
HITHERTO KNOWN AS INHABITING
THE ISLAND OF JAVA

ENUMERATED BY

C. RITSEMA Cz.**Hexarthrius** Hope.**Buqueti** Hope. — Various localities, in Mus. Leyd.**rhinoceros** Oliv. — Without more definite locality, in Mus.
Leyd.**Cladognathus** Burm.**giraffa** Fabr. — Various localities, in Mus. Leyd.**Metopodontus** Hope.**cinnamomeus** Guér. — Various localities, in Mus. Leyd.**Mohnikei** Parry. — Mt. Ardjoeno, in Mus. Leyd.**occipitalis** Hope. — Various localities, in Mus. Leyd.**sericeus** Westw. — *Conf.* Trans. Ent. Soc. Lond. IV, p. 274.**Prosopocoelus** Hope.**elegantulus** Albers. — Mt. Tengger, teste Albers: Deuts.
Ent. Zeits. 1891, p. 76.**Pastouri** Rits. — Mt. Poentjak, in Mus. Leyd.**Rosenbergli** Voll. — Buitenzorg, in Mus. Leyd.¹⁾**tarsalis** Rits. — Magelang, in Mus. Leyd.

1) I am informed by Mr. J. D. Pasteur that a male and a female of this species have been captured by him on Mt. Poentjak, on the frontier between the districts of Buitenzorg and Preanger.

Cyclommatus Parry.

faunicolor Hope. — *Conf. Trans. Ent. Soc. Lond. IV*, p. 273.
Frey-Gessneri Rits. — Mt. Poentjak, in Mus. Leyd.

Odontolabis Hope.

bellicosus Casteln. — Various localities, in Mus. Leyd.

Chalcodes Westw.

aeratus Hope. — Mt. Ardjoeno, teste Gestro: *Ann. Mus. Civ. Genova, XVI*, 1881, p. 313.

Neolucanus Thoms.

laticollis Thunb. — Various localities, in Mus. Leyd.

Eurytrachelus Thoms.

bucephalus Perty (= *bubalus* Perty). — Various localities, in Mus. Leyd.

eurycephalus Burm. (= *Candezei* Parry = *Lansbergei* Gestro = *Vollenhovii* Albers). — Various localities, in Mus. Leyd.

gypaëtus Casteln. (= *saiga* Burm. nec Oliv.). — Various localities, in Mus. Leyd.

Dorcus Mc. Leay.

Parryi Thoms. — Mt. Poentjak, in Mus. Leyd.

Hemisodorcus Thoms.

passaloides Hope. — Without more definite locality, in Mus. Leyd.

Gnaphaloryx Burm.

opacus Burm. (nec = *taurus* Fabr.). — Mt. Poentjak, in Mus. Leyd.

squalidus Hope. — Mt. Poentjak, in Mus. Leyd.

Aegus Mc. Leay.

acuminatus Fabr. — Various localities, in Mus. Leyd.

Notes from the Leyden Museum, Vol. XIV.

impressicollis Parry. — Tjibodas, teste Gestro: Ann. Mus. Civ. Genova, XVI, 1881, p. 332.

species? (an *lunatus* Weber). — Tjibodas, teste Gestro: Ann. Mus. Civ. Genova, XVI, 1881, p. 332.

Figulus Mc. Leay.

marginalis Rits. — Without more definite locality, in Mus. Leyd.

subcastaneus Westw. — Without more definite locality, in Mus. Leyd.

Cardanus Westw.

sulcatus Westw. — Without more definite locality, in Mus. Leyd.

In the above list 29 Javanese species are enumerated, whereas 26 species are recorded as such by Dr. Gestro in his tabular view of the geographical distribution of the Lucanidae in the Eastern Archipelago (Ann. Mus. Civ. Genova, XVI, 1881). Of two of these latter this habitat is, however, very doubtful:

Cyclommatus Dehaani Westw. (= *affinis* Parry), a species known as inhabiting Borneo and Sumatra, but noticed from Java by Parry (Cat. Lucan. 1st Ed. 1864, p. 84, 2nd Ed. 1870, p. 109 and 3rd Ed. 1875, p. 12), by the Authors of the Munich Catalogue (vol. III, 1868, p. 953) and by Gestro (Ann. Mus. Civ. Genova, XVI, 1881, tab. view). — There are two male specimens of this species in the Leyden Museum labelled »Bandong (Sijthoff)», but I have good reasons to believe this indication to be erroneous, as well as that of a male specimen of the Bornean *Cyclommatus tarandus* Thunb. from the same consignment.

Eurytrachelus Titan Boisd., a species known from Celebes, Borneo, Sumatra and Nias, but recorded from Java in the Munich Catalogue (vol. III, p. 958) and by Dr. Gestro (*l. c.*).

Notes from the Leyden Museum, Vol. XIV.

Metopodontus castaneus Hope is likewise recorded from J a v a in the Munich Catalogue (vol. III, p. 950), but this is a continental species (conf. Parry's Cat. Lucan. 2nd Ed. p. 108, and 3rd Ed. p. 10).

Finally, Dr. Fr. Leuthner in his » Monograph of the Odon-
tolabini" (pp. 459 and 460) mentions with doubt as
J a v a n e s e species:

Odontolabis Vollenhovii Parry, from West Java (a telodont
♂ in coll. Oberthür, olim Lansberge) and

Odontolabis Ludekingii Voll., from Bandong, Sijthoff (a te-
lodont (?) ♂ in Mus. Leyd.), whereas

Odontolabis siva Hope, of which specimens said to be from
J a v a occur in the Leyden Museum under the name
of *O. carinatus* Linn., is, without hesitation, rejected
by him as a native of this island (*l. c.* p. 438).

Leyden Museum, February 1892.

NOTE XXVII.

ADDITIONS AND CORRECTIONS
TO THE LIST OF SUMATRAN LUCANIDAE ¹⁾

BY

C. RITSEMA Cz.

ADDITIONS.

Metopodontus Hope.

spec. nov. (an *suturalis* Oliv.). — Mountains between Palembang and Bencoolen, teste Neerv. v. d. Poll: Nederl. Tijdschr. v. Ent. XXXIV, 1891, p. cxx.

Prosopocoelus Hope.

zebra Oliv. — Mountains between Palembang and Bencoolen, teste Neerv. v. d. Poll: Nederl. Tijdschr. v. Ent. XXXIV, 1891, p. cxix.

Cyclommatus Parry.

Pasteuri Rits. — Padang Sidempoean, in Mus. Leyd.

Aegotypus Parry.

? *trilobatus* Parry ♀. — Mountains between Palembang and Bencoolen, teste Neerv. v. d. Poll: Nederl. Tijdschr. v. Ent. XXXIV, 1891, p. cxx.

Aegus Mc. Leay.

Curtisi Waterh. — teste Waterhouse, Ann. and Mag. Nat. Hist. (6) V, 1890, p. 36.

impressicollis Parry. — Deli, teste Neerv. v. d. Poll: Nederl. Tijdschr. v. Ent. XXXIV, 1891, p. cxx.

1) See: Notes Leyd. Mus. XI, 1889, p. 233.

CORRECTIONS.

Cyclommatus faunicolor Westw. of the above cited List is not this species, but *Cyclommatus Dehaani* Westw. (= *affinis* Parry), originally described from Borneo. *Lucanus elaphus* Herbst is not = *Eurytrachelus purpurascens* Voll., but = *Eurytrachelus saiga* Oliv. (= *concolor* Blanch.) from the Moluccas.

In consequence of the above Additions the number of Sumatran Lucanidae amounts from 45 to 51 species.

From the neighbouring island of Nias the following 8 species are known as yet:

Metopodontus occipitalis Hope, *Cyclommatus Maitlandi* Parry, *Cyclommatus canaliculatus* Rits., *Odontolabis gracilis* Kaup, *Odontolabis inaequalis* Kaup, *Eurytrachelus Titan* Boisd., *Eurytrachelus purpurascens* Voll. and *Gnaphaloryx taurus* Fabr.

Leyden Museum, February 1892.

NOTE XXVIII.

LAND- AND FRESHWATER SHELLS
COLLECTED BY D^r. H. TEN KATE IN SOEMBA, TIMOR
AND OTHER EAST-INDIAN ISLANDS

DESCRIBED BY

M. M. SCHEPMAN.

(Plate 6).

The shells collected by Dr. ten Kate, are from localities which were still very imperfectly or not at all explored. To the latter category belongs the isle of Soemba, which has furnished a few very fine and interesting new species. Other species, though known to science, are remarkable for the novelty of their localities or because the habitat was not yet ascertained.

Considering that Dr. ten Kate travelled in behalf of the Dutch Geographical Society and that his chief occupations consisted of geographical and ethnological investigations, the number of species presented to the Leyden Museum must be called important. With respect to the literature, I must remark, that I have usually cited: for the Land-shells, the second volume of the Zoological Series of »Die preussische Expedition nach Ost-Asien'', by Prof. Ed. von Martens, Berlin, 1867, and for the Melanidae and Neritinae, the monographs of these genera published by Dr. Brot and by Prof. von Martens in the second edition of Martini Chemnitz' »Systematisches Conchylien-Cabinet''; these works give a full account of the synonyms.

Notes from the Leyden Museum, Vol. XIV.

For a few species which remained doubtful, I have to acknowledge the kind assistance of Prof. von Martens, while Dr. Brot was so kind as to determine the *Melaniae* or to verify my determinations.

1. *Nanina cidaris* Lamarck.

Martens, Ostas. Landschn. p. 203.

Locality: Amarassi, Timor.

A few juvenile specimens, the sculpture of which is rather coarse, and consists of spiral striae and oblique rugosities.

2. *Nanina rareguttata* Mousson,
var. *venusta* Beck.

Martens, Ostas. Landschn. p. 205; Taf. 9, fig. 5, 6.

Locality: Adonara.

This variety was formerly known from Flores, and was recently found also on Solor near Menanga (Martens: Zoologische Ergebnisse einer Reise nach Niederländisch Ost-Indien durch Prof. Max Weber; Mollusca, p. 228); it is new for Adonara.

3. *Nanina inquinata* v. d. Busch.

Martens, Ostas. Landschn. p. 207.

Locality: Amarassi, Timor.

The only specimen is more depressed than the figure given by Philippi (Abbildungen und Beschreibungen neuer Conchylien, I, p. 10, *Helix*, Taf. I, fig. 4). I should call the sculpture obliquely rugose, instead of "minutissime granulata"; the spots on the last whorl are transparent, calling in mind those of *N. rareguttata*. Prof. v. Martens, who determined this species, writes that though it was recorded from Java, this locality has little importance, as in former times every shell from the East-Indies was ascribed to that isle.

4. *Nanina baliensis* Mousson.

Martens, Ostas. Landschn. p. 207. — Mousson, Journ. Conch. 1857, p. 155; pl. VI, fig. 6.

Localities: Massoe, central S. E. Soemba, one fine specimen; near Waingapoe, one rather bad specimen; from the coast of Taimanoek, N. Soemba, and from a brook between Pensadoe Kopol and 'N datas, bleached specimens (subfossil?).

I sent the fresh specimen from the first-mentioned locality to Prof. v. Martens, having no specimens of the typical *N. baliensis* for comparison, the shape being more depressed than in the figures given by von Martens and Mousson.

Prof. v. Martens writes: »sehr ähnlich *N. baliensis* Mouss.; ich habe Exemplare von Mousson, von denen eines oder zwei eine beinahe ebenso gedrückte letzte Windung haben, und die Färbung der Schnecke ist fast in der Mitte zwischen der ächten *baliensis* und var. *Waandersiana*». — As all the specimens have the same depressed form I name them:

var. *soembaensis*.

Shell more depressed than the type, especially the last whorl; colour purplish, last whorl with fragments of a yellowish epidermis, suture margined with opaque white, last whorl nearly angular.

Diam. maj. 33, min. 29, alt. 25 mill.

Compared with the figure of *N. baliensis* of Mousson, l. c., the last whorl is more depressed and the colour paler, approaching that of *N. Waandersiana* (l. c. fig. 1), which has however two brown bands, with an intermediate white one; the specimen of Massoe has a very narrow white band at the periphery, that of Waingapoe shows only the sutural line, if wetted; the other specimens are too much faded to recognize the colours.

Notes from the Leyden Museum, Vol. XIV.

5. *Nanina Stuartiae* Sowerby.

Martens, Ostas. Landschn. p. 208.

Localities: Lahoeroe and Fialarang, central Timor.

Two specimens belong to the typical form, as they agree sufficiently with the measurements given by von Martens; another full-grown specimen and a younger one belong to a more depressed form. The typical specimens are richly banded, like fig. 462 of Reeve's *Conchologia Iconica* (*Helix*); two juvenile specimens seem to belong to the type; the smallest has a conspicuous angle at the periphery.

The depressed specimens differ from the type in having less bands, especially the full-grown one, which has only a narrow band at the suture, a broader one at the periphery and three fainter ones towards the umbilicus; the measurements of this specimen are:

Diam. maj. $43\frac{1}{2}$, min. 37, alt. 28, ap. lat. 23, alt. 22 mill.

The locality of *Nanina Stuartiae*, which remained doubtful (cf. v. Martens in his recent publication on the Mollusca collected by Prof. Weber, l. c. p. 227), has now been established.

6. *Nanina cochlostyloides*, n. sp.

Shell slightly umbilicated, globosely conical, obtuse at the apex, thin, whorls $5\frac{1}{2}$, the upper ones rather flat, the penultimate and ultimate inflated, rather smooth, with faint spiral striae, upper whorls pale yellowish or greenish, last whorl much dilated with a slight depression near the suture, which is consequently superficial at the upper whorls and deep at the lower ones, the last whorl is orange, yellow or green, dull, obliquely striated, slightly descending near the aperture, with a rounded angle near the suture and one towards the base, which is rather flat and has near the umbilicus, a small shining space; aperture rounded-rhomboid, lip rather thin, slightly thickened internally, columella obliquely descending, slightly reflected, interior of the aperture bright orange, citron yellow or white.

Notes from the Leyden Museum, Vol. XIV.

Diam. maj. 34, min. $30\frac{1}{2}$, alt. 28 mill.

Localities: Ka-Tokawai, East Soemba, many specimens; Massoe, central S. E. Soemba, one broken specimen; seashore of Melolo, one empty specimen, and a subfossil one from a brook between Pensadoc Kopol and 'Ndatas.

This species is remarkable for its shape and colouring, which call in mind some species of *Cochlostyla*, the upper whorls presenting in both respects a strong contrast with the last whorl. The following varieties in colour may be distinguished:

1. Upper whorls pale green, with the last whorl more or less distinctly orange, interior of aperture bright orange.
2. Like the preceding, but upper whorls yellowish.
3. Upper whorls pale green, last whorl yellowish, interior of aperture citron yellow.
4. Like the preceding, but upper whorls pale yellowish.
5. » N^o. 3 but interior of aperture white.
6. » » 5 » upper whorls whitish.
7. Upper whorls pale green, last whorl bright green, with darker streaks, bluish towards the aperture, interior of aperture white.

This species seems to be allied to *Nanina bimaensis* Mouss. and *N. halata* Mouss., but the apex is more obtuse than in those species, as figured in »Mousson, Mollusken von Java'', plate 21, figs. 1 and 2, the last-named variety resembling *N. halata* in colour; the chief difference may be the biangular character of the last whorl, and the resulting contrast with the upper whorls.

The specimens vary slightly in shape and size.

7. *Helix argillacea* Fer.

Martens, Ostas. Landschn. p. 273.

Localities: Lamakera, Solor. — Lahoeroe, Fialarang and Amarassi, central Timor; Koepang, Timor; Neklioe, North west Coast of Timor. — Ka-Tokawai, East Soemba; Waingapoe, Massoe, seacoast of Melolo, Soemba. — Subfossil

Notes from the Leyden Museum, Vol. XIV.

from hills and from the rivershore near Waingapoe, mixed with sea-shells, and from a brook between Pensadoe Kopol and 'N datas, Soemba.

From each of the above mentioned localities one or two specimens are collected; they vary much in size, the largest diameter being from 16 to 27 mill.

8. *Helix solorensis* v. Martens.

Martens, Ostas. Landschn. p. 277; Taf. 17, fig. 3.

Locality: Lamakera, Solor.

The specimens have a largest diameter from 16 to 17 millim. and are therefore slightly smaller than the smallest specimens recorded by von Martens. They vary much in the number of the spiral bands.

9. *Helix supracostulata*, n. sp.

(Plate 6, fig. 1).

Shell globosely depressed, with a covered umbilicus, only perceptible as a very narrow slit, solid, upper part distinctly plicately ribbed, base rather smooth; whitish, with a rather broad dark brown band at the periphery and a narrow one near the sutures, besides a number of paler bands above and below, varying much in the individuals; apex obtusely convex; whorls $4\frac{1}{2}$, slightly convex, last whorl descending abruptly in front. Aperture oblique, rounded; lip slightly expanded, thickened, white; columellar margin covering nearly completely the umbilicus, with a toothlike projection, outer margin near the peripheral band with a second very faint tooth, margins approximating, united by a thin callosity.

Diam. maj. $14\frac{1}{2}$, min. $12\frac{1}{2}$, alt. 11 mill.

» » 14, » 12, » 10 »

» » 13, » $10\frac{1}{2}$, » 9 »

» » 12, » 11, » $9\frac{1}{2}$ »

Localities: Ka-Tokawai, East Soemba, and »Soemba'', without more definite locality.

Notes from the Leyden Museum, Vol. XIV.

This species approaches *Helix solorensis*, but the latter is larger, more umbilicated, nearly smooth and without teeth in the aperture; it resembles very much *H. Reinga* Gray (Reeve, Conch. Icon. fig. 772), but the aperture is rounded and not triangularly lunar. The sculpture in *H. Reinga* is called obliquely striated and no mention is made of a second tooth on the outer lip.

The specimens vary in shape and size and in the number of the bands, which in some specimens are nearly limited to the sutural and peripheral ones; in other specimens the whole shell is banded.

10. *Amphidromus latestrigatus*, n. sp.

Shell sinistral, ovately-conical, nearly smooth, perforated, apical whorl blackish-brown, next whorl rose-colour, the following whorls are white, then pale yellow, last whorl darker yellow, total number of whorls about $6\frac{1}{2}$; they are slightly convex, the four last with broad brown flames, which on the last whorl become greenish gray and are often confluent towards the base, sutures with a narrow white margin, accompanied by a blackish one (wanting in one specimen); aperture ovately oblong, angular above, rounded beneath, occupying less than half the length of the shell, bluish white interiorly; lip moderately expanded; columella nearly straight, like the lip dark rose-coloured, margins connected by a thin callosity of the same colour. Alt. $36\frac{1}{2}$, diam. maj. 21, ap. alt. incl. perist. $18\frac{1}{2}$ mill.

» 37, » » 19, » » » 17 »

Localities: Massoe, central South East Soemba; near Waingapoe, Soemba.

This species differs from all the allied ones, by the broad flames and the fine rose-colour of the aperture; this last peculiarity is also found in *A. suspectus* Martens, *A. Annae* Martens and in the next species, but they differ in so many other respects, that they may be easily recognized.

The measurements taken from specimens from Massoe,

Notes from the Leyden Museum, Vol. XIV.

show that they vary in form. In nearly all the specimens the flames of the upper whorls are traversed by a narrow zone of the ground-colour; the yellow colour of the last whorl is more or less bright.

A juvenile specimen from Massoe has the space near the umbilicus rose-colour, with two brown spiral bands, beneath the periphery. This and two adult specimens from the same locality, are in the finest condition, the other are more or less bleached.

11. *Amphidromus reflexilabris*, n. sp.

Shell sinistral, elongately conical, slightly striated, imperforated, varying much in colour, yellow with green streaks, pale or orange yellow, with the upper whorls yellowish or brown, apex yellow or black brown, upper whorls nearly always with brown flames or blotches, lower whorls commonly with a white zone beneath the sutures; whorls 6, slightly convex; aperture elongately-ovate, angular above, angularly rounded and slightly effused beneath, occupying with the peristome about half the length of the shell, interior white; lip strongly reflected, so as to reach and even partly to cover the backside of the shell and forming a canal having the appearance of a very thick peristome; columella thickened, like the lip of a pale rose-colour, margins connected by a thin callosity. Alt. $39\frac{1}{2}$, diam. maj. $18\frac{1}{2}$, ap. alt. incl. perist. $29\frac{1}{2}$ mill.

» 42,	»	» 21,	»	»	»	» 21	»
» 50,	»	» $23\frac{1}{2}$,	»	»	»	» 27	»

Locality: Amarassi, Timor.

This species varies very much in size and colour, no two specimens being alike; the largest (somewhat bleached) one is totally yellow excepted the peristome, the smallest is yellowish orange, with white sutural zone, a dark apex and a few faint brown blotches ranged in two rows on the upper whorls; a third full-grown specimen and a juvenile one are yellow with more or less green, disposed in

Notes from the Leyden Museum, Vol. XIV.

streaks on the last whorl, and have a white sutural zone; the full-grown specimen has a yellowish apex and two rows of brown blotches on the next whorls, which cease abruptly on the penultimate whorl; the younger specimen has a dark apex and dark flames, of which only a few are divided by a narrow white spiral zone; the penultimate whorl is partly brown-shaded. This species shows affinities to many other species of the East-Indian Archipelago, the upper whorls of some specimens recall in mind *A. contrarius* Müll., the green whorl resembles some varieties of *A. furcillatus*. They differ from every known species by the uncommon development of the peristome, which is most characteristic and suffices to recognize the species at first sight.

12. *Amphidromus contrarius* Müller.

Martens, Ostas. Landschn. p. 363; Taf. 20, fig. 7^a, 7^b, 7^c.

Localities: Koepang and Amarassi, Timor.

One full-grown and one juvenile specimen from Koepang, belong to the variety figured by von Martens at fig. 7^c. The only specimen from Amarassi is dark towards the aperture, which is not completely developed and has a purple brown margin.

13. ? *Amphidromus suspectus* v. Martens.

Martens, Ostas. Landschn. p. 362; Taf. 21, fig. 8.

Locality: Soemba.

Only one juvenile specimen has been collected; the third whorl shows faint traces of dark blotches. Prof. v. Martens writes that it differs from his specimens by the vivid citron-yellow colour, and the distinctly limited dark rosy spot near the umbilicus, which characters call in mind *A. laevis* Müll., where the rosy spot extends however to the black band. As all the specimens of *A. laevis* I compared, have more or less distinct bands on the upper

Notes from the Leyden Museum, Vol. XIV.

whorls, if there is any painting at all, and the specimen from Soemba has faint blotches like some specimens of *A. contrarius* Müll., and as, according to an information formerly received from v. Martens, this occurs also with *A. suspectus*, I have thought it best to give this only specimen this name, till more and full-grown specimens are obtained.

14. *Limnaea javanica* v. Hasselt.

Martens, Conchologische Mittheilungen, Band I, p. 87.

Locality: Waingapoe, N. Soemba.

One rather small specimen seems to belong to the typical form.

var. *porrecta* v. Martens.

Martens, l. c. p. 89; Taf. 16, fig. 9, 10.

Locality: Amarassi, Timor.

One fine specimen, slightly less elongated than the figure given by v. Martens, and a worn one, besides a small specimen in alcohol.

15. *Limnaea perlevis* Conrad.

Conrad, Proceedings Acad. Nat. Sciences Philadelphia, Vol. 5, p. 11.

Localities: Lakes of Soesoek and Ainiba, central Timor.

Several specimens from the above mentioned localities. Edgar A. Smith (Freshwater shells of Australia; Journ. Linn. Soc. Vol. 16, p. 271) and Tapparone Canefri (Fauna Malac. della Nuova Guinea, p. 244) take *L. perlevis* as a synonym of *Lessoni* Desh. (Magasin de Zoologie, Vol. I, 1831, Moll. p. 16; pl. 16); this figure is more globose; according to the description the shell has »la couleur et la transparence de la corne blonde qui serait légèrement teintée de vert”.

Prof. von Martens, who compared the shells with those of the Museum in Berlin, says that the specimens resemble

Notes from the Leyden Museum, Vol. XIV.

more *L. perlevis*, that both may be however varieties of one species. The specimens are much smaller than the figure of *Lessoni* Desh. and of *Strangei* Ph. which should also be a synonym, and may be not full-grown; so I give them the name applied by Prof. v. Martens.

16. *Physa moluccensis* Lesson.

Martens, Ueber die Ostasiatische Limnaeaceen; Malak. Blätter, 1867, p. 211 (*Physa moluccensis*, p. 218).

Localities: Freshwater lakes near Soesoek and Ainiba, central Timor.

The specimens are slightly more inflated than a specimen from Delhi, Timor, collected by Prof. v. Martens and kindly sent me for comparison; for the rest they agree sufficiently.

17. *Cerithidea ornata* A. Adams.

Reeve, Conchologia Iconica, sp. 22.

Locality: Rivers of North West Soemba.

18. *Melania punctata* Lamarck.

Brot, Mon. *Melania*, in Martini Chemnitz, Syst. Conch. Cabinet, II^e Ausg. p. 168; Taf. 20, fig. 4, 4^a.

Locality: Koepang, Timor.

Numerous specimens are collected at the just named locality; they are all covered with a very thick inerustation. They vary in sculpture and painting, some specimens being almost without brown spots or streaks, while others are richly ornamented. Many have rather distinct spiral striae and a few have also small ribs on the upper whorls; though this does not agree with the description, Dr. Brot, after examination, left them with the more typical specimens.

Notes from the Leyden Museum, Vol. XIV.

19. *Melania clavus* Lamarck.

Brot, Mon. *Melania*, l. c. p. 175; Taf. 21, fig. 17.

Locality: Hills near Waingapoe, Soemba; one subfossil specimen.

20. *Melania ten Katei*, n. sp.

(Plate 6, fig. 2).

Shell subulately-turreted, solid, grayish or yellowish horn-colour, often with purple-brown blotches above and below the suture, apex in the adult slightly decollated; whorls 7 or 8, slightly convex, almost smooth, or upper whorls covered with spiral striae, which occupy only the lower part of the lower whorls and the central part of the last whorl.

The upper whorls form a regular cone; last whorl inflated and with an obtuse angle a little below the suture, base eventually with a few very faint striae. Aperture ovately oblong, slightly angular above, rounded beneath; lip simple, slightly sinuous; columella slightly curved.

Alt. 32, diam. maj. 13, apert. alt. $11\frac{3}{4}$, lat. 6 mill.

» 26, » » 10, » » 9, » 5 »

Localities: Waingapoe; Massoe; a brook near Lentang, N. Soemba; Isle Groot Bastaard.

The specimens from the last-named locality are more yellowish and smaller than those of Soemba, the spire is less eroded and the last whorl less inflated; they are probably young shells. Those of Soemba seem to be allied to *M. moesta* Hinds, but the whorls are not so high and are more inflated; the angle is scarcely perceptible at the peristome. *M. sobria* has small ribs on the upper whorls, *M. costellaris* on the contrary is plicated on the lower whorls.

The measurements are taken from the largest specimen, the only one found near Massoe, without epidermis, and from a fresh specimen from Lentang.

21. *Melania* spec.

Localities: Rivers of N. W. Soemba, Isle Groot Bastaard.

Notes from the Leyden Museum, Vol. XIV.

The specimens have the appearance of being young, they resemble in sculpture some of the foregoing varieties, but the striae are less distant from each other; they have brown flames and are faintly banded about the periphery, with a darker band near the base of the last whorl.

22. *Melania turriculus* Lea.

Brot, Mon. *Melania*, l. c. p. 239; Taf. 25, fig. 7, 7^a.

Locality: Isle Groot Bastaard, near the northern coast of Flores.

Besides by the sculpture described by Dr. Brot, the specimens are covered with microscopical spiral striae.

23. *Melania* spec.

Localities: Massoe, Waingapoe, hills and rivershores near Waingapoe, mixed with sea-shells (subfossil), Soemba.

Dr. Brot did not know this species, but thought that more material ought to be compared before it could be described as new or regarded as a variety of any described species. The shell resembles *M. turriculus* Lea in sculpture, but it is rather different in form.

24. *Melania scabra* Müller.

Brot, Mon. *Melania*, l. c. p. 266; Taf. 27, fig. 14, 15.

Localities: Rivers of N. W. Soemba; Massoe, central S. E. Soemba; Waingapoe; hills and rivershores near Waingapoe, Soemba, mixed with sea-shells (subfossil).

The specimens belong to a much elongated variety; those of the last named localities have no spines on the last whorls.

25. *Melania armillata* Lea.

Brot, Mon. *Melania*, l. c. p. 309; Taf. 32, fig. 5.

Localities: Hills and rivershores near Waingapoe, Soemba, mixed with sea-shells (subfossil).

Notes from the Leyden Museum, Vol. XIV.

26. *Melania lateritia* Lea.

Brot, Mon. *Melania*, l. c. p. 319; Taf. 33, fig. 1.

Localities: Massoe; rivers of N. W. Soemba; hills and rivershores near Waingapoe (subfossil).

The specimens from N. W. Soemba and some of the subfossil ones are more elongated than the figures of Brot. They differ however from the next species by the stronger granules.

27. *Melania Mauiensis* Lea.

Brot, Mon. *Melania*, l. c. p. 322; Taf. 33, fig. 7, 8.

Localities: Karita river, Melolo, Massoe, Waingapoe, hills and rivershores near Waingapoe, Soemba.

Slightly varying in being more or less elongated and more or less distinctly sculptured.

The specimens from the last-named locality are subfossil.

28. *Truncatella valida* Pfeiffer.

Martens, Ostas. Landschn. p. 162.

Locality: Baä, Rotti.

The specimens are smaller than those described by Dr. Pfeiffer (*Monographia Auriculaceorum*, p. 184), the largest being only 9 mill., like those collected by Prof. v. Martens. Several specimens, though full-grown, are still slightly smaller.

29. *Cyclotus soembaensis*, n. sp.

(Plate 6, fig. 3).

Shell globosely depressed, thick, moderately umbilicated, rather smooth, with short radiating striae near the suture, which become very faint towards the periphery; whitish, with red-brown meshes and fulminating streaks, leaving on the largest part of the shell only small oval spots of white, and forming large blotches near the suture; apex horn-colour; spire moderately elevated; whorls about 5,

Notes from the Leyden Museum, Vol. XIV.

very convex; sutures slightly margined, deep; last whorl rounded, slightly ascending and enlarged towards the aperture. Aperture nearly perpendicular, circular, peristome thick, double; upper part of the exterior margin angular. Interior of the aperture with a callosity for the operculum.

Diam. maj. 20, min. 16, alt. 17 mill., apert. $9\frac{3}{4}$ mill.

Locality: near Waingapoe at the Makwai river, Soemba.

This species, which belongs to the subgenus *Pseudocyclophorus*, I sent to Prof. v. Martens, who declared it to be new, resembling *C. guttatus* Pfr. in painting, but much less depressed, and allied in form to *C. amboinensis*, which is much smaller and has the last whorl descending. *C. politus* Sow., which recently is recorded from Flores by v. Martens, is much more globose.

30. *Helicina exserta* v. Martens.

Martens, in Zool. Ergebnisse einer Reise in Niederl. Ost-Indien durch Dr. M. Weber: Mollusca, p. 220; Taf. 12, fig. 16—19.

Locality: Baä, Rotti.

The only specimen, which is relatively higher than those described l. c., I sent for comparison to the author, who writes, that on account of the prominent keel, it should be considered as *H. exserta*, and not as *H. oxytropis* Gray.

The measurements of these allied species are:

Hel. oxytropis: diam. maj. 9, alt. 6—7 mill.

» » : » » 8, » 5 »

Helic. exserta, from Saleyer: diam. maj. $10\frac{1}{2}$, alt. 6 mill.

» » , » Rotti: » » $8\frac{1}{2}$, » $5\frac{3}{4}$ »

31. *Helicina sculpta* v. Martens, var. *minor* v. Martens.

Martens, Ostas. Landschn. p. 167; Taf. 4, fig. 17.

Locality: Baä, Rotti.

The lirae are rather distinct, one specimen has at least five lirae above the keel.

Notes from the Leyden Museum, Vol. XIV.

32. *Neritina variegata* Lesson.

Martens, Monogr. *Neritina*, in Martini Chemnitz, Syst. Conch. Cab. IIe Ausgabe, p. 78; Taf. 10, fig. 11—17.

Locality: Koepang, Timor.

The specimens have only a faint indication of the orange spot near the columella.

33. *Neritina turrita* Chemnitz,
var. *strigillata* Lamarck.

Martens, Monogr. *Neritina*, l. c. p. 105; Taf. 11, fig. 18, 19.

Locality: Soemba.

34. *Neritina squarrosa* Recluz.

Martens, Monogr. *Neritina*, l. c. p. 162; Taf. 16, fig. 13—18.

Locality: Koepang, Timor.

The specimens of this species and of *N. variegata* are covered with a thick incrustation, so that they cannot be recognized before cleaning.

This and the preceding species of *Neritina* were not recorded by Prof. v. Martens from the mentioned localities.

Rhoon near Rotterdam, February 1892.

NOTE XXIX.

CONTRIBUTIONS TO THE KNOWLEDGE OF
THE FAMILY BRENTHIDÆ

BY

Dr. A. SENNA.VIII ¹⁾.

Enumeration of the species known as yet from Java.

In the following paper I intend to give descriptions of several new species, which Mr. Ritsema, very kindly, sent to me for examination and description, from the collections of the Leyden Museum. These species ²⁾ have been for the greater part presented by Mr. J. D. Pasteur and, though few in number, they are of great interest and add considerably to our knowledge of the Brenthid-fauna of western Java where they were collected. At the same time I shall add the names of those species already described but not yet known as living in Java, and finally the names of the species indicated by authors from this island, so as to bring at once under the eye all that is at present known about Javanese Brenthidæ.

1) See for the 1st to 5th Contributions: *Bullettino d. Soc. Entom. Italiana*, Anno XXI, pp. 33—38 and 101—109; for the 6th: *Notes from the Leyden Museum*, Vol. XIII, pp. 161—166, and for the 7th: *Annali del Mus. civ. di Stor. Nat. di Genova*, Ser. 2^a, Vol. XII, pp. 429—494. 1892.

2) They are signed with an asterisk.

Notes from the Leyden Museum, Vol. XIV.

Subfam. TRACHELIZINÆ.

Gen. *Cerobates* Schönherr.

1. *C. tristriatus* Lund, Skrivt. af naturhist. selskab. V, 2, p. 66. 1802.

Appears to be generally distributed in the Indian- and Indo-Malayan subregions. Mr. Fea, the well-known naturalist and traveler of the Genoa Museum, has collected it recently in Burmah and Karennee, at elevations varying from 900 to 1100 meters. — Several specimens from Java in my collection.

2. *C. sexsulcatus* Motschulsky, Etud. entomol. VII, p. 95. 1858.

This species occurs in Ceylon, India, Burmah and the Sunda Islands. — It was found by Mr. Fea in Karennee at a height of 900—1100 meters. — I have examples from Java.

Var. *glaberrima* Senna, Ann. Mus. Civ. Genova, Ser. 2^a, Vol. XII, p. 450. 1892.

This variety has the posterior angles of the head more rounded and the elytra very glossy and shining at the sides. Specimens from Burmah, Karennee and Tenasserim in the Genoa Museum; from Java and Gilolo in my collection.

Gen. *Trachelisus* Schönherr.

3. *T. bisulcatus* Lund, Skrivt. af naturhist. selskab. V, 2, p. 6. 1802.

This species is very common and generally distributed through India, Tenasserim, Karennee, Burmah, China, Japan, the Sunda Islands, the Malayan subregion and Australia.

4. *T. puncticollis* Bohem., in Schönh. Genera et Spec. Curcul. V, p. 494. 1840.

It is indicated from and apparently confined to Java, but it is not contained in the present collection.

Notes from the Leyden Museum, Vol. XIV.

5. *T. scrobicollis* Gylh., in Schönh. Genera et Spec. Curcul. I, p. 331, and V, p. 494. 1840.

This species has been recorded from Java and Borneo; I possess a specimen from Sumatra.

*6. *T. insularis*, nov. spec.

Elongatus, ferrugineo-rufus, nitidus: capite supra canaliculato, fere bilobato, basi in medio inciso et utrinque calloso, lateribus bituberculato, parce squamoso; rostro sulcato, apici dilatato; antennarum articulis apicalibus majoribus; thorace sulcato undique punctato, punctis squamosis; elytris sulcato-punctatis, subparallelis, declivitati apicali margine explanato, apici rotundatis.

Long. $9\frac{1}{2}$ —13 mm.; lat. max. prothor. $1\frac{1}{2}$ — $2\frac{1}{3}$ mm.

Ferruginous-reddish, shining: the elytra a little paler, the rostrum at the apex, the antennæ, the two protuberances in the middle of the head, anterior and posterior margin of the prothorax, sutural line, basal portion of the thighs, the knees and the tarsi darker or blackish. The head in the ♂ is broader than long, narrower in front than behind, notched and scaled at the base, with two callosities in the middle and two protuberances on each side at the hinder angles; furrowed above, the sides of the channel very convex, elevated, scarcely punctured, shining. Eyes slightly prominent, brownish. Rostrum elongate, furrowed from the base up to the apex, about as long as $3\frac{1}{2}$ the head; the basal portion a little shorter than the apical one, conical, slightly broader and elevated where it receives the antennæ; the anterior part narrow at the base and widened at the apex: beneath the rostrum at the base glabrous, shining; between the antennæ and in the apical part with a carina and the lateral margin slightly elevated. In the female the head is similarly shaped and scattered with scales; the rostrum at the base is shorter but broader and slightly furrowed, beyond the antennæ filiform with a distinct furrow in the middle. Antennæ short, equal in length to the rostrum, a little thickened towards the extremity: the 1st joint stout, clavate, as long as the 2nd,

Notes from the Leyden Museum, Vol. XIV.

3rd and 4th taken together; the 2nd curved externally, the 3rd narrow at the base, the 4th—8th joints transverse and slightly differing from one another in length; 9th and 10th scarcely longer, the apical one is pointed at the tip.

Prothorax oblong, equal in length to the antennæ, at the apical margin slightly narrower than at the base where it is limited by an elevated and sinuate border; behind the middle broader and moderately curved at the lateral margins, with a furrow above and scaled punctures; the punctures are posteriorly more numerous and wanting towards the apex at the sides. In the female the prothorax is broader and more robust than in the male.

The elytra are as long as twice the prothorax and of the same broadness; they have the base notched, the humeral angles rounded and scarcely callous, the sides subparallel, the apical declivity and the apex with explanate and moderately upturned edge (in the ♀ simply explanate): above uniformly and deeply sulcato-punctate; the 1st furrow near the suture narrower and superficially punctured; the interstices raised, the sutural line of a darker color than the rest.

The under surface of the body reddish and shining; metasternum furrowed, with distinct punctures only at the sides, the central part and the two basal segments of the abdomen very finely punctured, the 1st slightly excavated; the apical margin of the 2nd, 3rd and 4th segment with a transverse row of punctures and sometimes scaled; the apical segment is punctured. Legs regular and of the same color as the body.

This species belongs to the group of *T. scrobicollis* Gylh. and *T. puncticollis* Boh. which have the prothorax punctured and furrowed, but it is easily distinguished especially by the head and elytra which are of a different shape.

Hab. Java. — A single female collected by Dr. S. Müller (Leyden Museum) and a male in my collection. — I have also another male and two females from Penang.

Notes from the Leyden Museum, Vol. XIV.

* 7. *T. modestus*, nov. spec.

Præcedenti affinis sed differt (♂) colore obscuriore, antennis robustioribus, rostro base trisulcato, squamoso; capite similiter conformato at sulco profundiore et supra magis bilobato, evidenter punctato; prothorace magis punctato; punctis squamosis; elytris sulcato-punctatis, sulcis latioribus, punctis squamulis ferentibus, apici margine minus explanato: ♀ capite brevi, magis punctato et sulcato, rostro post antennis non canaliculato; elytris apici brevi margine terminatis.

Long. 6—8 mm.; lat. max. prothor. $1\frac{1}{4}$ —2 mm.

Allied to the foregoing species but certainly distinct. — Chestnut-reddish, the elytra brown-reddish with the sutural line darker in the basal half and two blackish spots behind the middle. The antennæ are more robust, the three apical joints broader. Rostrum at the base trisulcate, and furrowed also at the sides, scattered with minute scales; the median furrow does not extend to the apex which is finely punctured; beneath the rostrum has a carina along the middle and the lateral margins are raised: in the female the apical portion is filiform, more slender, not furrowed. The head is similarly shaped as in *T. insularis* but above it is punctured, distinctly bilobed and deeply furrowed; the furrow scaled like the basal and lateral notches; the notch in the middle is broader. The prothorax has the punctures at the sides more numerous than in *T. insularis*. The elytra are sulcato-punctate, the furrows broader and the interstices more raised, the suture is broad, the first furrow narrow and impunctate, the apex with the edge less explanate. Body beneath and legs as in the foregoing species, but the 2nd abdominal segment slightly depressed.

Hab. Java. — A male and a female collected by Dr. S. Müller (Leyden Museum).

* 8. *T. mæstus*, nov. spec.

Parum elongatus, nigro-brunneus, elytris minus saturatis. Caput supra punctatum, bilobatum, medio sulcatum et basi bituberculatum, lateribus tuberculis 2 instructum; an-

Notes from the Leyden Museum, Vol. XIV.

tennæ modice clavatæ, articulis apicalibus majoribus, perforatis; rostrum basi canaliculatum, post antennis (♀) filiforme; prothorax pone medium ampliatus et rotundatus, supra punctatus et sulcatus; elytra subparallela, declivitati apicali attenuata, apici obtuse rotundata, sutura leviter incisa, in dorso profunde sulcato-punctata, interstitiis elevatis.

Long. 11 mm.; lat. max. prothor. 2 mm. ♀.

Certainly of the same group as the foregoing species, but easily distinguished by some characters and by its different facies. Antennæ distinctly thicker at the extremity; the joints similar in shape to those of the other *Trachelizus* here described. The head deeply separate by the neck, twice broader than long, furrowed above and bilobed, notched at the base but not scaled, scattered with punctures, with the front depressed. The rostrum sulcate at the base, filiform beyond the antennæ. Prothorax as long as the rostrum, much narrower anteriorly than at the base, behind the middle broader and rounded, above strongly furrowed and punctured. Elytra about as long as twice the prothorax and of the same broadness, notched at the base, parallel at the sides, with the shoulders callous and the apical edge scarcely prominent and turned upward; above deeply sulcato-punctate, the furrows broad; the first furrow near the suture narrower and impunctate, the interstices narrow and raised, the 2nd more elevated at the apical declivity than the others. Metasternum sulcate in the middle; the abdomen as in the foregoing species. Legs regular and robust.

Hab. Eastern Java. — A single female captured on Mt. Ardjuno by Mr. Hekmeyer (Leyden Museum).

Gen. *Miolispa* Pascoe.

Sectio 1^a. Prothorax non sulcatus, impunctatus.

* 9. *M. suturalis* Pascoe, Journal of Entomology, Vol. I, p. 393. 1862.

Of this species I possess in my collection two specimens

Notes from the Leyden Museum, Vol. XIV.

from Java where it appears to be uncommon. I several times have had specimens from Amboina, Batchian, Halmaheira and Penang. The rufous or fulvous yellow color varies in intensity, being in some specimens paler, in others cinnamon rufous or dark rufous: the sutural region is sometimes glossy black.

*10. *M. javanica*, nov. spec.

Elongata, robusta, capite, rostro (apice excepto), antennis elytrorum apice, pedibusque rufo-brunneis; prothorace castaneo-piceo vel brunneo-castaneo plus minusve saturato, elytris piceis vel piceo-castaneis, vitta suturali pone medium interrupta lineolisque flavo-ferrugineis. Caput oblongum, basi emarginatum et in medio incisum; rostrum breve, modice sulcatum, apici divisum; prothorax levis, nitidissimus; elytra medio ampliata, apici truncata, sulcato-punctata, interstitiis angustis, elevatis.

Long. 8—12 mm.; lat. prothor. $1\frac{1}{3}$ —2 mm.; lat. elytr. med. $1\frac{1}{2}$ — $2\frac{1}{2}$ mm. ♂, ♀.

The head is longer than broad, convex above, shining, without punctures and furrow; the front with a very minute ditch, the base is emarginate, scarcely narrower, notched in the middle; the sides slightly curved, the hinder angles subacute: beneath shining with scattered punctures hardly perceptible: in the female the head is similarly shaped but nearly square. Rostrum robust, as long as $1\frac{1}{3}$, the head, moderately curved, the basal portion shorter than the apical one, subcylindrical and excavated at the sides, furrowed above, but the furrow not touching the base; between the antennæ scarcely elevated, beyond them the rostrum is a little narrower and furrowed in the 1st half, towards the apex widened and at the extremity divided in the middle: the mandibles are exerted, including an empty space: in the female the basal portion is shorter than the head and elevated near the antennæ, the apical part is filiform and slightly furrowed in the basal half. Antennæ clavate, about as long as twice the head: the 1st joint robust, clavate, longer than the 2nd and

Notes from the Leyden Museum, Vol. XIV.

3rd taken together; the remainder (the apical one excepted) differing but little in length from one another, the 2nd curved externally, the 3rd obconic, the 4th and 5th moniliform, the others almost obconic; the apical joints more robust and perfoliate, the 9th and 10th rounded, the 11th less long than the two preceding ones and acuminate at the tip; the apical joints are hairy and pubescent, the others simply hairy.

The prothorax is as long as $1\frac{1}{2}$ the head, ovate, narrower anteriorly than at the base where it has an elevate margin, impunctate above, without any furrow and very shining.

The elytra are scarcely longer than twice the prothorax; the base is emarginate, the shoulders raised and angulate, the sides moderately curved and broader than the thorax, the apex almost truncate with the hinder angles rounded; above sulcato-punctate; the punctures contiguous, the 1st furrow impunctate, the interstices narrow and raised, the 2nd broader with an interrupted yellow line.

Body beneath pitchy-brown, metasternum furrowed at the apex and scattered with very minute punctures, the basal segments of the abdomen not furrowed, the apical margin and the other segments with a transversal row of punctures. Legs robust, unarmed; femora and tibiæ broad; tarsi of the same length and pubescent.

The color in this species varies in intensity. The head, rostrum, antennæ and legs are reddish brown; the apical margin of the rostrum, the median and basal portion of the thighs, and the knees are darker, but sometimes the head too is duskish: the prothorax is uniformly chestnut-pitchy or with the basal and apical margin brown-reddish: the elytra are piceous or pitchy-chestnut, except the apical declivity this being reddish-brown, more or less infusate; a sutural black spot is sometimes perceptible behind the middle: the yellow line of the 2nd interstice is interrupted or not and frequently only infusate behind the middle; in some specimens two short lines are also visible at the base and

Notes from the Leyden Museum, Vol. XIV.

two others before the middle, and finally, the portion along the suture and the 2nd interstice is sometimes fulvous or ferruginous.

Hab. Western Java. — Several specimens, males and a female, collected by Mr. J. D. Pasteur (Leyden Museum).

Sectio 2^a. Prothorax non sulcatus vel obsoletissime canaliculatus, crebre punctatus.

* 11. *M. metallica*, nov. spec.

Capite æneo, basi subtruncato, in medio profunde inciso, supra crebre punctato, lateribus bituberculato; rostro cylindrico basi vix incrassato, parce canaliculato, brunneo vel brunneo-æneo, apici ampliato, punctulato; antennis validis, clavatis, articulo apicali longiore; prothorace æneo, pone medium rotundato, creberrime punctato; elytris brunneo-ferrugineis vel brunneo-æneis, apice rufo, linea flava pone medium interrupta; in dorso sulcato-punctatis, humeris rotundatis et paullatim elevatis, lateribus modice ampliatis, apici emarginatis angulisque externis rotundatis.

Long. 8—12½ mm.; lat. prothor. 1½—2 mm.; lat. elytr. med. 1½—2½ mm.

Head a little longer than broad, parallel at the sides, distinctly notched at the base, with 2 minute tubercles on each side at the hinder angles, above moderately convex, densely punctate, sometimes with an obsolete furrow; the sides shining, rarely punctured; beneath scattered with very fine punctures and sometimes slightly furrowed in the middle. Rostrum scarcely as long as twice the head; the basal part shorter than the apical one and hardly thicker, slightly trisulcate, excavated at the sides, slightly raised at the antennæ; the anterior portion widened at the apex and punctured, furrowed above and excavate at the sides in the 1st half; beneath keeled in the middle: in the female the head is as long as broad; the basal portion of the rostrum shorter than the head, the apical part longer, filiform and hardly curved upward; beneath the rostrum

Notes from the Leyden Museum, Vol. XIV.

is keeled at the base and between the antennæ. The latter are clavate, shorter than the head and rostrum together: the basal joint stout, as long as the 2nd and 3rd taken together, the 2nd and the 3rd as in the foregoing species, the 4th—8th transverse, of the same length but very slightly differing in broadness; the apical joints hairy, longer, more perfoliate, the 9th and 10th transverse, the 11th conical and as long as the two preceding ones: in the female the last joint is shorter.

Prothorax longer than broad, almost as long as the rostrum, subovate, narrower anteriorly than at the base, behind the middle broader and rounded, the base with an elevate margin; above deeply punctate and sometimes with a very obsolete furrow; the sides towards the apex almost impunctate, shining; at the base scattered with remote punctures.

The elytra are as long as the thorax, head and rostrum taken together; the base is a little emarginate and of the width of the thorax, the shoulders are rounded and slightly raised, the sides broader than the base, the apex emarginate with the outer angles rounded; above sulcato-punctate, the interstices raised, callous at the base; the 2nd broader, more raised at the apical declivity and with a yellow line interrupted behind the middle; the 1st furrow is impunctate.

The undersurface of the body very shining; the apical portion of the metasternum and the basal segments of the abdomen slightly excavate in the middle and punctured, in the female without any furrow; the last segment finely punctate. Legs stout, scattered with minute punctures; anterior coxæ contiguous, femora clubshaped, tibiæ almost straight, tarsi robust and subequal.

This species varies also in coloration: the rostrum is reddish brown, more or less infusate, in some specimens the apical portion is slightly metallic; the antennæ and the neck are red-brown, the last joints sometimes duskish; the head and thorax are, for the greater part, cupreous

Notes from the Leyden Museum, Vol. XIV.

and very shining at the sides, except the posterior margin which is reddish brown; in some individuals the metallic tint is wanting and the thorax is dark brown or brown-red; the elytra have the apex rufous or brown-red, above they are pitchy brown, more or less cupreous, rarely bluish, sometimes brown-red or chestnut ferruginous; in the specimens of the last color the suture and the lateral margins are darker and behind the middle near the suture a duskish spot is visible. In the individuals here described only the 2nd interstice has a yellow line. Body beneath brown-red, more or less infuscate and cupreous, rarely with a metallic bluish color. Coxæ, basal portion of femora, tibiæ and tarsi red-brown; the club of the thighs darker and sometimes slightly metallic.

Hab. Western Java. — Several specimens, males and females, collected by Mr. J. D. Pasteur (Leyden Museum); Borneo (Genoa Museum).

Sectio 3^a. Prothorax distincte canaliculatus vel
sulcatus, crebre punctatus.

*12. *M. nupta*, nov. spec.

♂. *Capite, prothorace, antennis, pedibusque castaneo-rufis vel rubro-brunneis; elytris nigris, apice (sutura excepta) et fascia media a basi usque ad declivitatem apicalem ferrugineis. Caput quadratum, basi incisum et lateribus bituberculatum, supra canaliculatum ac punctatum; rostrum basi trisulcatum, lateribus excavatum, post antennis canaliculatum; antennæ articulis apicalibus longioribus et majoribus; prothorax brevis, crebre rugoso-punctatus, in dorso canaliculatus, canali longitudinali integro; elytra profunde sulcato-punctata, apici emarginata, angulis externis rotundatis. — ♀. Capite, rostro, antennis, pedibusque rubro-brunneis; elytris nigris in singula fascia dorsali a basi usque ad medium, macula pone medium et apice (sutura excepta) ferrugineis; præterea differt a mare capite et rostro basi brevioribus, parte apicali longiore, fili-formi; antennarum articulo apicali minus elongato.*

Long. 7—11 mm.; lat. prothor. $1\frac{1}{3}$ —2 mm.

Notes from the Leyden Museum, Vol. XIV.

This species is remarkable by the elytra differently spotted according to the sex, and it is allied (judging from description) to *M. ceylonica* Desbroch.¹⁾ In both the sexes the head, rostrum, antennæ, prothorax and legs are chestnut-rufous or brown-red and the elytra black; in the male each elytron has a longitudinal large ferruginous or yellow-ferruginous band, taking its rise from the base, finishing before the apical declivity and not touching the lateral margin, nor the suture; moreover the apex and the apical declivity (except the suture) are of the same color: sometimes the band is not interrupted, but simply narrower at the apical declivity. In the female each elytron has a basal band interrupted towards the middle and at the apical declivity; but, like in the male, sometimes the band is simply narrower in the two indicate parts.

Head in male square, furrowed and punctate above, notched at the base with two minute tubercles at the hinder angles: in the female it is shorter, but similarly shaped. Rostrum in ♂ as long as $2\frac{1}{2}$, the head and moderately curved; the basal portion shorter than the apical one and hardly thicker, with three furrows above and an excavation at the sides, the central furrow is a little narrower than the lateral ones; widened and rounded at the insertion of the antennæ: the apical part is furrowed at the base, hardly enlarged at the extremity and punctured: in the female the basal portion of the rostrum is equal in length to the head and conical, beyond the antennæ filiform and moderately curved, furrowed at the base, as long as $1\frac{1}{2}$ the head and basal portion together: beneath the rostrum in both sexes is as in *M. metallica*. Antennæ almost of the same length as the rostrum and head taken together, similarly shaped as in the preceding species, but the joints less robust, the apical ones narrower, the 9th

1) Desbrochers des Loges, Description de Curculionides et de Brenthides inédits du Musée Indien de Calcutta, in: Journ. Asiat. Soc. Bengal, Vol. 59, part 2, p. 223. 1890.

and 10th almost rounded: the 11th joint in the female is shorter.

Prothorax longer than broad and as long as the rostrum, narrower anteriorly than at the base, enlarged behind the middle and rounded, with a raised margin at the base; rugoso-punctate above and furrowed, the punctures are less numerous above and wanting at the sides towards the apex; the furrow extending up to the apex and impunctate. In several specimens, ♂ and ♀, the prothorax is chestnut in the middle, with the basal margin and a ring towards the apex reddish; the apical extremity is duskish.

Elytra as long as the thorax, head and rostrum together: the base is truncate, the shoulders are rounded, the sides subparallel, the apex emarginate and the outer angles rounded; above sulcato-punctate, the punctures regular and deeper in some individuals; the 1st furrow narrower than the others and impunctate, the interstices moderately raised.

Body beneath chestnut-red, more or less infusate and distinctly punctured; the punctures more numerous at the sides: metasternum furrowed, the basal segments of the abdomen hardly depressed in the middle. Anterior coxæ contiguous, legs somewhat stout, femora clubshaped and punctured, tibiæ sinuate inwardly and punctured, tarsi as in *M. metallica*.

Hab. Western Java. — Thirteen males and ten females collected by Mr. J. D. Pasteur; a ♂ by S. Müller (Leyden Museum).

*13. *M. exarata* (Dejean) Desbrochers des Loges, Journ. Asiat. Soc. Bengal, Vol. 59, part 2, p. 223. 1890.

This species is indicated in Dejean's Catalogue as *Cecephalus exaratus* Dej. from Java, but was not described: only recently Mr. Desbrochers des Loges has referred it to *Miolispa* (fide Power) and characterized it briefly. I ascribe to this species five individuals from the Leyden Museum and several others from the Genoa Museum, originating from the above named island, and I believe it

Notes from the Leyden Museum, Vol. XIV.

useful to give here a complete description, because Mr. Desbrochers does not speak of some of its characters.

Head nearly square, slightly narrower at the apex, with the base emarginate, the hinder angles subacute, channeled above and punctate, sometimes the furrow obsolete or wanting, the sides with a few hairs: beneath it is deeply punctured. Rostrum short, the basal portion as long as the head, furrowed above and excavate at the sides: the apical part of the same length or hardly longer, briefly or not furrowed and almost not enlarged at the apex. Antennæ moderately long and equal in length to the thorax and head taken together: the 1st joint is clavate and longer than the 2nd and 3rd together; the 2nd subquadrate, the 3rd obconic, the remainder transverse and equal; the three apical joints perfoliate, as long as the preceding ones taken together (except the basal joint); the 9th and 10th subcylindrical, the 11th of the same length as the 9th and 10th taken together and obtusely acuminate at the tip. Neck robust, deeply separated from the head.

Prothorax as long as the head and rostrum united, narrower at the apex, enlarged towards the middle and subparallel at the sides; the base has a raised margin; above it is channeled and rugoso-punctate.

Elytra of the same length as the thorax, head and rostrum together, with the base slightly emarginate, the shoulders rounded, the sides subparallel, the apical declivity narrower, the apex emarginate and the outer angles rounded; above deeply sulcato-punctate, the punctures regular, the interstices narrower and raised, the 1st and 2nd furrow from the suture impunctate.

Metasternum and the two basal abdominal segments punctured and excavate in the middle; the sides of the body, except those of the apical segments, are clothed with a band of very minute and densely set yellowish or whitish scales. Legs moderately robust, scattered with a few hairs.

Notes from the Leyden Museum, Vol. XIV.

The color of the head, rostrum, antennæ, prothorax and legs is red-brown or chestnut; the thorax and the median portion of the thighs are always darker than the rest; the elytra are black or dusky with a ferruginous or yellow-ferruginous band along the middle of each elytron from the base to the apex.

Length 8—11 mm.; broadn. of the prothor. $1\frac{1}{2}$ —2 mm.

Hab. Western Java. — Five individuals obtained by Mr. J. D. Pasteur (Leyden Museum); Tjibodas (Java), several specimens collected by Mr. Beccari (Genoa Museum); New Guinea (Desbrochers' collection).

*14. *M. conformis*, nov. spec.

Robusta, capite, rostro, antennis pedibusque brunneo-rufis, prothorace obscuriore, elytrorum sutura, margine laterali, maculisque duobus prope suturam pone medium obscuris, ceterum brunneo-ferrugineis. Caput subquadratum, punctatum, supra convexum in medio impressum unde fere bilobatum; rostrum breve, profunde sulcatum; antennæ ut in specie præcedente; prothorax canaliculatus, creberrime rugoso-punctatus; elytra profunde sulcato-punctata, interstitiis angustis, elevatis.

Long. 10 mm.; lat. prothor. 2 mm.

Allied to *M. exarata* but easily distinguished by the different punctation of the prothorax and elytra and by the body beneath being not scaled at the sides. Head almost bilobed above, punctate, slightly impressed in the middle; rostrum furrowed up to the apex, the margin of the furrow raised, the apical extremity hardly a little enlarged. Antennæ as in *M. exarata*; prothorax with the furrow narrower and obsolete towards the apex, above deeply rugoso-punctate. Elytra strongly sulcato-punctate, the interstices raised, narrower; the 1st furrow near the suture only impunctate. Metasternum and basal segments of the abdomen slightly excavated in the middle, scattered with punctures at the sides, but wanting the scaled band.

Hab. Western Java. — A single male specimen taken by Mr. J. D. Pasteur (Leyden Museum).

Notes from the Leyden Museum, Vol. XIV.

Subfam. AMORPHOCEPHALINÆ.

Gen. *Amorphocephalus* Schönherr.

* 15. *A. lævis* Power, Annales de la Société Entom. de France, 5^e Sér. Vol. VIII, p. 486. 1878.

Mr. Power has indicated this species from India, Mr. J. D. Pasteur captured a male specimen in Western Java, and recently a specimen has been collected by Mr. Fea in Karennee.

The coloration of the body is variable being more or less dark: sometimes superficial punctures are visible in the furrows on the elytra.

Subfam. ARRHENODINÆ.

Gen. *Prophthalmus* Lacordaire.

* 16. *P. versicolor* Senna, Annali del Museo Civico di Storia Naturale di Genova, Ser. 2^a, Vol. XII, p. 466. 1892.

I refer to this species two females captured in Western Java by Mr. J. D. Pasteur. The types are in the Genoa Museum and were taken by Mr. Fea in Karennee. This species varies in general color, in maculation of the elytra and in having sometimes the 1st furrow near the suture punctured.

17. *P. longirostris* Gylh., in Schönh. Genera et Spec. Curcul. I, p. 323. 1840.

Occurs, but not frequently, in Java; it is more common in other Sunda Islands. I have it from Celebes and Perak.

18. *P. tridentatus* Lund, Skrivt. af naturhist. selskab. V, 2, p. 91. 1802.

This species, indicated from Java in Sturm's Catalogue with the name of *P. macrocephalus*, lives also in the Moluccas. I have specimens from Borneo where it is abundant.

19. *P. pugnator* Power, Annales de la Soc. Ent. de France, 5^e Sér. Vol. VIII, Bull. p. 44. 1878.

Notes from the Leyden Museum, Vol. XIV.

This species is unknown to me, but seems to be not rare in Java, because Mr. Power, in describing it, mentions several collections which contain it from this island.

Gen. *Baryrrhynchus* Lacordaire.

20. *B. latirostris* Gylh., in Schönh., Genera et Spec. Curcul. I, p. 323. 1840.

Common in Java and in Borneo.

21. *B. dehiscens* Gylh., in Schönh., l. c. p. 324.

This species is very abundant in Borneo, but occurs also in Java. I have a few examples of it.

Gen. *Agriorrhynchus* Power.

22. *A. Borrei* Power, Petites Nouvelles Entomolog. II, p. 241. 1878.

The habitat given for this insect is Java, and from this island the specimens of several collections originate; but it is not a local species, Mr. Fea having taken it at Thagatá in Tenasserim, and the Marquis Doria at Sarawak (Borneo).

Gen. *Orychodes* Pascoe.

23. *O. cynamomi* Herbst, Füssl. Arch. IV, p. 76. 1783.

A widely spread species in the Indo-Malayan subregion, probably not extending northward of Malacca, nor southward of Celebes. I have several individuals from Java, Borneo, Sumatra and Menado.

* 24. *O. piliferus*, nov. spec.

♂. Capite brevi, basi subtruncato, postice mutico, castaneo-rubro; rostro brevi, basi incrassato, profundeque sulcato, ante antennis cylindrico, supra lateribus denticulatis, rubro-brunneo; antennis rubris, articulo apicali duobus præcedentibus æquante; prothorace ovato, castaneo-piceo, nitidissimo; elytris rubro-brunneis, humeris rotundatis et breviter callosis, lateribus subrectis, apici emarginatis, in dorso convexis,

Notes from the Leyden Museum, Vol. XIV.

fortiter punctato-sulcatis, interstitiis convexis, elevatis, lineis punctis ferrugineis ornatis.

Long. 15 mm.; lat. prothor. $2\frac{2}{3}$ mm.

Of the same group as *O. lineolatus* Kirsch and *Ritsema* Senna and allied to *O. insignis* Lewis but certainly distinct. The head is short and small comparably to the size of this species, the base is subtruncate and deeply separate from the neck, the hinder angles a little prominent but not spined, above with an obsolete channel in the middle and a few punctures. The basal portion of the rostrum is longer than the head and stoutish, deeply furrowed above and almost bilobed to the insertion of the antennæ; the apical part $1\frac{1}{2}$, as long as the base, cylindrical, the extreme margin is almost of the same broadness as the rest; smooth above, scattered with very minute tubercles and with a row of teeth at the sides: beneath the rostrum is depressed at the apex and scarcely keeled between the antennæ. These are as long the thorax, the head and the basal portion of the rostrum together; the 1st joint is clavate, equal in length to the 2nd and 3rd united; the 2nd curved externally at the base, the 3rd and 4th a little narrower at the base, the remainder almost cylindrical and equal in length, the apical obtusely pointed at the tip and as long as the two preceding ones: the joints are moderately perfoliate and hairy.

Prothorax ovate, curved at the sides, narrower anteriorly than at the base, where it is terminated by a large collar transversely furrowed; convex above, very shining, without any furrow or punctures, but with a median notch at the base.

Elytra almost as long as twice the prothorax, with the base subtruncate, the shoulders slightly callous, the sides hardly broader than the base, the apex emarginate and a little explanate, the outer angles rounded; deeply punctato-sulcate above, the 1st furrow near the suture obsolete punctate, the interstices convex, raised, slightly curved at the base. The 2nd interstice from the suture has four

Notes from the Leyden Museum, Vol. XIV.

yellow-ferruginous lines (at the base, before and behind the middle and at the apical declivity), the 3rd has two lines (before and behind the middle), the 4th and 5th a singly line behind the middle; these lines before and behind the middle form two spots: the 7th and 8th interstices have a line before the middle, the 8th also another at the apical declivity. The elytra have a few very long and fine whitish hairs at the sides.

Body beneath shining, the basal margin of the prosternum impressed; metasternum finely punctured with a ditch at the apex, the two basal abdominal segments excavated in the middle and scattered with minute punctures, the apical segments pubescent laterally. Anterior coxæ not contiguous, legs robust, femora clubshaped and spined, anterior tibiæ broader in the middle, tarsi long, the 1st joint elongate, the 3rd broad and deeply divided, beneath pubescent.

Hab. Western Java. — A single male specimen in the Leyden Museum, captured by Prof. A. A. W. Hubrecht at Telaga bodas, a crater near Garoet.

Subfam. EUTRACHELINÆ.

Gen. *Eutrachelus* Latreille.

*25. *E. Temmincki* Latreille, in Cuvier, Règne animal, p. 389. 1825.

This species, the giant of the family, seems to be a peculiar form of Java and Sumatra. It is not rare and varies in the dimensions and in having the elytral spots more or less evident.

Subfam. CEOCEPHALINÆ.

Gen. *Hormocerus* Schönherr.

26. *H. reticulatus* Lund, Skrivt. af naturhist. selskab. V, 2, p. 81. 1802.

Notes from the Leyden Museum, Vol. XIV.

The most common species of the genus and generally distributed throughout the Indo-Chinese, Indo-Malayan and Austro-Malayan subregions.

27. *M. scrobicollis* Bohem., in Schönh., Genera et Spec. Curcul. VIII, 2, p. 373. 1844.

I have in my collection a specimen labelled «Java», but it is not without doubt that I include it in this list. This species was described from the Phillippine Islands.

28. *M. amœnus* Perroud, Ann. Soc. Linnéenne de Lyon, p. 423. 1853.

29. *M. Dehaani* Gylh., in Schönh., Genera et Spec. Curcul. I, p. 360. 1840.

30. *M. javanicus* Perroud, l. c. p. 415.

31. *M. rufovittatus* Perroud, l. c. p. 419.

I have not seen the last four species which have been indicated from Java.

Gen. *Schizotrachelus* Lacordaire.

*32. *S. brevicaudatus* Lacord., Genera des Coléoptères, VII, p. 455, n°. 2. 1866.

Of this species Mr. J. D. Pasteur has taken five individuals varying in size and one also in the color. They correspond with Lacordaire's description.

*33. *S. consobrinus* Lacord., l. c. p. 456.

The four specimens, obtained in Western Java by Mr. J. D. Pasteur and referred by me to this species, differ from Lacordaire's description in having the prothorax without punctures at the sides and the elytra hardly perceptibly punctured and not »*parum profunde punctato-striatis*'' as says Lacordaire. In the present state of our knowledge it seems to me that these differences do not oblige of establishing a new species or variety, because the species of this genus hitherto described show a considerable variation in size, color, punctuation of the thorax and elytra, and, sometimes, transitional forms between the different species.

Notes from the Leyden Museum, Vol. XIV.

Subfam. ITHYSTENINÆ.

Gen. *Cediocera* Pascoe.*34. *C. tristis*, nov. spec.

Anguste elongata, capite, rostro, antennis pedibusque brunneo-rufis; prothorace plerumque magis saturato vel nigro-fusco, interdum pruinoso; elytris nigro-fuscis, apice et appendiculis apicalibus brunneo-rufis; abdomine punctato et parce squamoso, segmento primo in medio in mare piloso.

♂. Long. 11—18 mm. et ultra (elytr. caud. excl.); lat. prothor. 1½—2 mm.; ♀, long. 11—19 mm. (elytr. caud. excl.); lat. prothor. 1½—2⅓ mm.

Closely allied to *C. longicornis* Pasc. but distinguished by the different color, by the head being beneath evidently punctured, and by the other characters above mentioned. Head long, narrower at the base, notched and tuberculate, deeply separated from the neck; above with a longitudinal groove and moderately convex towards the front. Rostrum with a shallow groove extending almost up to the apex: the basal part as long as twice the head and gradually narrower towards the antennæ, at the insertion of these a little widened, rounded and raised; the apical part very short, slightly broader, emarginate at the apex; beneath the portion of the rostrum towards the antennæ has a keel in the middle, the rest and the head are scattered with punctures. In the female the head is shorter than in the male, broader, with the base strongly notched; the basal part of the rostrum is longer than the head and excavated, the apical portion equal in length to the head and filiform: beneath the head and the base of the rostrum are punctured, the apical part glossy. Antennæ filiform, with the 1st joint stouter than the others and clavate, the 2nd to 8th cylindrical, of equal length, with the apex a little broader; the apical joints longer, the 11th is the longest and obtusely acuminate at the tip. In the female the antennæ are shorter than in the male, the three apical joints

Notes from the Leyden Museum, Vol. XIV.

equal in length to the preceding ones, with the exception of the basal joint.

Prothorax elongate, narrower anteriorly and a little broader behind the middle, channeled above and punctured, the punctures more numerous towards the base and sometimes scaled.

Elytra as long as the thorax, head and basal portion of the rostrum taken together, with the base emarginate, the shoulders a little raised, the sides narrower in the middle, the apex truncate and the outer angles terminating in a slender tail, which is provided at the tip with a few hairs; above punctato-striate, the apical declivity with a raised interstice: in the female the elytra are only spined at the apex.

Body beneath in ♂ shining, piceous; metasternum convex, scattered with scaled punctures, more numerous at the sides: the two basal segments of the abdomen with similar punctures: the 1st with a hairy space in the middle, the 2nd scarcely depressed and scaled at the apical margin, the other segments are scaled and punctured: in the ♀ the metasternum and the abdomen are convex, shining, and covered with punctures and with a few scales. Legs as in *C. longicornis*.

A very polymorphous species: the length of the antennæ and of the tails is much variable; some specimens have the antennæ extending to the apex of the abdomen and the tails longer than $\frac{2}{3}$ of the length of the elytra or as long as these; in others the antennæ and the tails are more or less short and in some males the apex of the elytra is only spined.

Hab. Western Java. — Several specimens, ♂ and ♀ (Leyden Museum), obtained from Mr. J. D. Pasteur and a ♂ in my collection labelled »*Heteroplites*, espèce inédite de Lacordaire''; Sumatra (the longest specimens I have seen), collected by Dr. Elio Modigliani (Genoa Museum); Perak, some individuals in my collection; Sarawak (Borneo), a male captured by Marquis Doria (Genoa Museum).

Notes from the Leyden Museum, Vol. XIV.

OBSERVATION. This species is labelled in some collections with the names of *Heteroplites unicolor* Power and *Diurus unicolor* Chevrolat, and it is the same insect which Lacordaire in his "Genera des Coléoptères" (Vol. VII, p. 471) says to be an undescribed species of *Heteroplites* from Java, as I find on the label of a specimen in my collection. This author in the above-named work writes: "J'en connais trois" (species of *Heteroplites*) "dont une seule (*H. erythroderes* Westw.), originaire des îles Philippines, est décrite en ce moment. Les deux autres sont de Java ou des Moluques"; and in the second note, speaking of the tails of the elytra, he adds: "l'une des deux espèces inédites les a aussi longues et aussi grêles que le *Diurus*"; and truly, in some specimens of *Cediocera tristis* the tails are very long, as long as the elytra. *C. longicornis* Pasc. too has long tails, but this species is not from Java and seems to be a local form from the Andaman islands. Thus I state that my *C. tristis* is the species of *Heteroplites* mentioned but not described by Lacordaire. According to Lacordaire's description of *Heteroplites*, no doubt *Cediocera tristis* must be included in that genus, as well as *C. longicornis* Pasc., which is a very closely allied species. Nevertheless I refer the new species to the genus *Cediocera* because it corresponds perfectly with the generic description given by Pascoe, and I consider it to be a distinct genus because the characters of *Heteroplites* ought to be modified for the reception of some new species which, within a short time, will be described by me; but at the time *Cediocera* was established it was a doubtful genus, as Mr. Pascoe, in describing it in the Annals and Magazine of Natural History, 1887, p. 20, compared it with *Diurus* and indicated its differential characters, without saying, however, by what characters the new genus differs from *Heteroplites*. The differences between *Diurus* and *Heteroplites* are the same as those between *Cediocera* and *Diurus*, and I failed to find the distinctive characters by which *Cediocera* was differentiated from *Heteroplites* in the sense of Lacordaire.

Gen. *Diurus* Pascoe.

35. *D. antennatus* Ritsema, Notes from the Leyden Museum, Vol. IV, p. 214. 1882.

I have not seen this species; the type is a male in the Leyden Museum.

36. *D. forcipatus* Westwood, The Cabinet of Orient. Entom. p. 31. 1848.

This species occurs also in Borneo where it has been collected by Marquis Doria.

37. *D. furcillatus* Gylh., in Schönh., Genera et Spec. Curcul. I, p. 359. 1840.

This species inhabits Java and the other Sunda islands.

NOTE. In this list the whole number of Javanese species of Brenthidæ, known to me at this moment, amounts to 37, belonging to 13 genera. The examination of these genera and species is instructive and gives the opportunity to make some general remarks.

Amongst the 9 families living in the Oriental Region, 6 are represented in Java, and of these that of the *Trachelizinae* is the richest, containing 14 species; then follow the *Arrhenodinae*, *Ceocephalinae*, *Ithysteninae*, *Eutrachelinae* and *Amorphocephalinae*. Very interesting is the want of the *Taphroderinae*, *Ephebocerinae* and *Belophorinae* in this island.

The genus *Cyphagogus* f. i., of which the species are so numerous, extends in the Austro-Malayan, Indo-Chinese and Indo-Malayan subregions (Borneo) and has also a representative in Japan: the genus *Zemioses* inhabits Japan, Karennee, New-Guinea; these two genera seem not to be represented in Java.

The absence of *Jonthocerus* amongst the *Ephebocerinae* and of *Ectocemus* amongst the *Belophorinae* is also remarkable. The first mentioned genus is widely distributed and has been collected also in Sumatra and Borneo (Sarawak); the second extends to New-Guinea, Australia, Borneo, Sumatra, Malacca, Karennee and the Philippine Islands.

Notes from the Leyden Museum, Vol. XIV.

Amongst the genera belonging to the fauna of Java, we find that there are:

- 3 genera (*Cerobates*, *Trachelizus*, *Amorphocephalus*) of wide distribution in the Oriental region and inhabiting also other zoogeographical regions.
- 7 genera (*Miolispa*, *Prophthalmus*, *Baryrrhynchus*, *Orychodes*, *Hormocerus*, *Schizotrachelus*, *Diurus*) particularly distributed in the Indo-Malayan and Austro-Malayan subregions, some of them extending, however, also in other subregions.
- 2 genera (*Agriorrhynchus* and *Cediocera*) confined to the Indo-Malayan and Indo-Chinese subregions.
- 1 genus (*Eutrachelus*) peculiar to the Indo-Malayan subregion.

In examining the list of the species we see that there are ¹⁾:

- 4 species of wide geographical distribution, viz.: *Cerobates tristriatus*, *C. sexsulcatus*, *Trachelizus bisulcatus*, *Hormocerus reticulatus*.
- 5 species represented in the Indo-Malayan and Austro-Malayan subregions, viz.: *Miolispa suturalis* (also Penang), *M. exarata*, *Prophthalmus longirostris*, *P. tridentatus*, *Orychodes cinnamomi*.
- 4 species extended in the Indo-Malayan and Indo-Chinese subregions, viz.: *Trachelizus insularis*, *Amorphocephalus lævis* (also in India), *Prophthalmus versicolor*, *Agriorrhynchus Borrei*.
- 8 species confined to the Indo-Malayan subregion, viz.: *Trachelizus scrobicollis*, *Miolispa metallica*, *Baryrrhynchus latirostris*, *B. dehiscens*, *Eutrachelus Temmincki*, *Cediocera tristis*, *Diurus forcipatus*, *D. furcillatus*.
- 15 species up to this date peculiar to Java, viz.: *Trachelizus puncticollis*, *T. modestus*, *T. mæstus*, *Miolispa javanica*, *M. nupta*, *M. conformis*, *Prophthalmus pugnator*, *Ory-*

1) *Hormocerus scrobicollis* is not taken into consideration, its presence in Java being doubtful.

chodes piliferus, *Hormocerus amœnus*, *H. Dehaani*, *H. javanicus*, *H. rufovittatus*, *Schizotrachelus brevicaudatus*, *S. consobrinus*, *Diurus antennatus*.

The number of the species characteristic at present of Java is very remarkable as is shown by the list, but I have no doubt that when it will be possible to explore diligently the Sunda islands, we shall find, if not the majority, certainly several of these species extended to them; on the other hand it seems that some species, inhabiting Borneo and Sumatra and collected also in other countries, are wanting in Java.

Firenze, R. Istituto di Studi Superiori.

Museo di Zoologia e Anatomia comparata degli Invertebrati, March 1892.

NOTE XXX.

TROIS ESPÈCES NOUVELLES D'HELMIDES
DES ILES DE LA SONDE

DÉCRITES PAR

A. GROUVELLE.

Macronychus minusculus, n. sp.

Elongatus, subconvexus, nitidus; capite prothoraceque nigricantibus; elytris castaneis, antennis pedibusque dilutioribus; prothorace parce punctato, antice angustato, lateribus rotundatis; elytris subparallelis, prothorace vix latioribus, ad apicem conjunctim rotundatis, punctato-striatis, intervallis punctis latioribus, lateribus carinatis. Antennae 8-articulatae, 1—3 subelongatis, latioribus, 4—7 brevibus, compressis, 8 elongato-ovato. — Long. 1 mill.

Allongé, subparallèle, un peu convexe, brillant. Antennes testacées, courtes, formées de 8 articles; les trois premiers un peu allongés, faiblement dilatés en angle en dedans; les quatre suivants moins larges, serrés, le dernier formant une massue ovoïde allongée. Tête et prothorax noirâtres, marge antérieure du dernier plus claire. Prothorax éparsement ponctué, très rétréci en avant, marges latérales arrondies, marge antérieure arquée en avant, formant avec les bords latéraux des angles à peine sensibles. Ecusson triangulaire. Elytres brun clair, un peu plus de deux fois plus longs que larges, un peu plus larges que le prothorax, acuminés ensemble au sommet; épaules obtuses, peu marquées; stries ponctuées, fines, peu distinctes sur le

Notes from the Leyden Museum, Vol. XIV.

disque, points espacés, intervalles beaucoup plus larges que les points. Pattes plus claires que les élytres.

Hab. Sumatra. — Musée de Leyde et coll. Grouvelle.

Nous rapportons cette espèce au genre *Macronychus* Müll., bien que la partie centrale de son antenne ait quatre articles au lieu de trois; la partie basilaire et la massue ont la même conformation que chez le *Macronychus quadrituberculatus* Müll.

Stenelmis Bosschae, n. sp.

Oblonga, subparallela; capite prothoraceque opacis, ochraceis; elytris nitidis, testaceis, ante apicem fusco-maculatis; prothorace elytris angustiore, latitudine paulo longiore, antice vix attenuato, in longitudinem sulcato, sulco antice abbreviato, utrinque postice carinato; elytris punctato-lineatis, punctis ad apicem attenuatis, 3° intervallo basin versus elevato, 6° carinato. — Long. 1¾ mill.

Oblong, subparallèle. Tête et prothorax couverts d'une pubescence feutrée jaune un peu rougeâtre. Elytres très finement pubescents, testacés, légèrement enfumés sur la suture un peu avant le sommet. Antennes et pattes d'un roux testacé. Prothorax un peu plus long que large à la base, rétréci vers le sommet; sur le disque un sillon longitudinal atténué en avant, de chaque côté, vers la marge latérale, une courte carène basilaire et dans l'angle du sillon médian et de la base une impression ponctiforme. Ecusson ovale. Elytres plus larges que le prothorax, parallèles, ponctués en lignes; 3^{me} intervalle légèrement relevé surtout vers la base, 6^{me} caréné.

Hab. Bornéo occ.: Sambas (Dr. Bosscha). — Musée de Leyde.

Stenelmis sulcata, n. sp.

Elongata, parallela; capite prothoraceque nigricantibus; elytris obscure castaneis, basin versus dilutioribus; fronte in longitudinem sulcata, utrinque impressa; prothorace elongato,

Notes from the Leyden Museum, Vol. XIV.

antice transversim constricto, postice utrinque oblique impresso; elytris ad apicem conjunctim acuminatis, punctato-lineatis, intervallis linearum angustis. — Long. $2\frac{1}{4}$ mill.

Allongé, parallèle. Tête et prothorax noirâtres; elytres bruns, plus clairs à la base; pattes foncées, base des tibias et tarses plus clairs; antennes rougeâtres. Tête avec une impression longitudinale sur le front et une impression ponctiforme à la base de chaque antenne. Prothorax plus long que large, presque parallèle, sillonné transversalement vers le tiers antérieur, impressionné obliquement de chaque côté vers le premier tiers à partir de la base; impressions convergentes vers la base et aboutissant à une petite carène longitudinale; de chaque côté de cette carène, dans l'angle formé avec la base, un point enfoncé. Ecusson ovale. Elytres plus larges à la base que le prothorax, parallèles, acuminés ensemble au sommet, ponctués en lignes; points gros, atténués vers le sommet, serrés, intervalles des lignes plus étroits que les points; intervalles 2 et 3 costiformes, les deux premiers seulement à la base, le dernier presque jusqu'au sommet.

Hab. Sumatra. — Musée de Leyde et coll. Grouvelle.

Nous réunissons dans le tableau suivant les espèces de *Stenelmis* des Indes orientales qui nous sont connues. Il faudrait ajouter à ces espèces les *S. ceylonica* Mots., *exarata* Mots. et *binervosa* Reitt. dont nous ne connaissons que les descriptions.

1. Elytres acuminés séparément au sommet *bicolor* Reitt.
 » » ensemble au sommet. 2.
2. Prothorax avec un sillon transversal vers
 le tiers antérieur *sulcata* Grouv.
 Prothorax sans sillon transversal vers
 le tiers antérieur 3.
3. Prothorax sans sillon longitudinal sur
 le disque *Ritsemae* Reitt.
 Prothorax avec un sillon longitudinal
 sur le disque 4.

Notes from the Leyden Museum, Vol. XIV.

4. Pubescence feutrée du prothorax rougeâtre *semirubra* Reitt.
 Pubescence feutrée du prothorax non rougeâtre ou nulle 5.
5. Pubescence feutrée des élytres grise . . *orientalis* Fairm.
 » » » » nulle . . 6.
6. Noirâtre avec les carènes testacées . . *picta* Reitt.
 Elytres testacés, avec une tache noirâtre avant le sommet; carènes bien marquées *Boschae* Grouv.

Paris, Mars 1892.

NOTE XXXI.

PROSOPOCOELUS TARSALIS, A NEW LUCANID

DESCRIBED BY

C. RITSEMA Cz.

Mr. W. Albarda has presented to the Leyden Museum a male specimen (forma major) of an interesting *Prosopocoelus*-species from central Java, captured by Mr. Roldanus at Magelang (Kadoe Residency), which no doubt is still undescribed. It seems to be allied to *Prosopocoelus cilipes* Thoms., from Assam, a species which is unknown to me, but which is said to be likewise distinguished by its slender and elongate tarsi and by the crenulate lateral margins of its prothorax.

Length without mandibles 23 mm., that of the mandibles 8 mm.; breadth at the shoulders 8 mm. — Above dark chestnut-brown, brighter on the elytra and legs, the tarsi and body underneath blackish.

The head opaque, large, longer than the prothorax but narrower, flattened and slightly sloping towards the front margin, deeply emarginate between the outer margins of the mandibles, the bottom of the emargination faintly bisinuate; between the eyes and the front angles of the prothorax the head is slightly swollen; the ocular canthus, of which the outer margin is straight and has a slightly oblique direction, reaches the middle of the eye; the surface of the head is covered with an extremely fine and dense punctuation intermixed with large punctures on the depressed portion and on the sides (even on the canthus).

The mandibles are slightly and regularly curved inwards; their dentition is irregular: a blunt ante-basal tooth which in the right mandible is placed closer to the base than in the left one, and between this tooth and the forked apex five irregularly arranged blunt teeth are present. The mandibles are glossy, with the exception, however, of the basal portion which is opaque; they are covered with an ex-

Notes from the Leyden Museum, Vol. XIV.

tremely fine and dense sculpturing intermixed with punctures which become larger towards the base; the outer upper margin is slightly raised at the apical portion.

The prothorax is strongly transverse, considerably broader on its anterior half than the head, narrowed in an γ -like curved line towards the base; basal angles acute and slightly directed forward; the base itself margined and sinuate; the sides margined and minutely serrate; the front margin strongly bisinuate and margined laterally, its lateral angles protruding and rounded; above subnitid along the middle, opaque at the sides in consequence of a very fine and dense granulation; an almost invisible central groove is accompanied on each side, a little before the middle, by a punctiform impression. The scutellum is broadly heartshaped and shows a few large punctures at the base.

The elytra are subnitid, extremely closely punctured, the punctures more distant on the sutural interstice and somewhat larger at the base which is toothed at the shoulders and nearly straight.

The intercoxal part of the prosternum is slightly prolonged beyond the coxae, perpendicularly truncated behind with rounded angle. The under surface of the head and prothorax opaque with a few punctures; the sides of the metasternum densely punctured and thinly covered with soft ferruginous hairs, its central portion impunctate but provided with an impressed line; the abdomen subnitid.

The anterior tibiae straight, armed on the outer edge with five acute teeth which become larger towards the apical fork; they are fringed on the inner edge with ferruginous hairs; the four posterior tibiae are provided with rows of ferruginous hairs; the intermediate ones show on the outside, a little beyond the middle, a small tooth which is almost imperceptible on that of the right side; the posterior tibiae are unarmed; the tarsi are very slender and elongate, longer than the tibiae and fringed beneath with long golden yellow hairs.

NOTE XXXII.

ON A COLLECTION OF BIRDS FROM THE ISLANDS
OF FLORES, SUMBA AND ROTTI

BY

J. BÜTTIKOFER.

Dr. H. ten Kate, to whom we are already indebted for previous zoological collections made on his recent travels through the Flores- and Timor-group of Islands ¹⁾, sent, in September and November last, a number of birds from Flores, Sumba (Sandelwood) and Rotti, the latter being a small island near the western end of Timor. Unfortunately the birds, a great number of which were preserved in alcohol, are all destitute of any annotations as to date and color of soft and naked parts, but the localities being very interesting, I venture to give a list of the birds collected on the different islands.

**A. BIRDS FROM FLORES AND THE NEIGHBORING ISLANDS
OF GROOT BASTAARD AND ADONARA.**1. *Spizaetus limnaetus* (Horsf.).*Spizaetus cirratus* (part.) Schl. Mus. P.-B., Revue Accip. p. 52.

One specimen, with the exception of back, wings and tail entirely white. Collected at Sika, south-east coast of Flores.

1) See my note in N. L. M. XIII, p. 210 (1891).

2. *Chalcococcyx malayanus* (Raffl.).

An adult specimen from Sika (Flores).

3. *Sauropatis chloris* (Bodd.).

Dacelo chloris Schl. Mus. P.-B., Revue Alcedines, p. 32.

An adult bird from Groot Bastaard, a small island situated off the north-east coast of Flores, and a somewhat younger specimen from the island of Adonara on the east coast of Flores.

4. *Collocalia esculenta* (L.).

An adult bird from the island of Samao. The two nestlings, mentioned in N. L. M. 1891, p. 210, also belong to this species.

5. *Pachycephala fulvotincta* Wall.

An adult male from Adonara.

6. *Cinnyris pectoralis* (Horsf.).

An adult male from Groot Bastaard.

7. *Anthothreptes malaccensis* (Scop.).

Two adult males from Sika, and one from Adonara.

8. *Tropidorhynchus neglectus* Bütt.

A half-grown specimen from Sika, without any knob at the base of the bill, and the legs pale flesh-color. Plumage as in the adult bird.

9. *Gracula venerata* Bp.

Three adult specimens from Koting (Flores).

10. *Oriolus broderipi* Bp.

Two adult males from Koting (Flores).

Notes from the Leyden Museum, Vol. XIV.

11. *Parus cinereus* Bonn. & Vieill.

An adult specimen from Sika (Flores).

12. *Acanthiza tenkatei*, n. sp.

General color above pale olive-brown, some of the feathers of the crown tipped with pale fulvous, lesser wing-coverts like the back, median and greater coverts dusky brown, edged with the color of the back; quills dusky brown, the primaries narrowly edged on the outer web with whitish brown, the secondaries with edges of pale olive, especially the innermost, which are, moreover, waved with dusky cross-bars when seen under a certain light. A patch of long, silky white feathers on each side of the rump, the latter and the upper tail-coverts tinged with rufous, the tail-feathers ashy brown on the basal, black on the terminal half, except the gray tip which has a large white spot on the inner web. The whole tail waved with dark cross-bars when seen under certain lights. Lower surface, including the cheeks, under wing-coverts, inner edge of the secondaries ashy white, more silky white on abdomen and under tail-coverts, thighs white, intermixed with brown feathers, especially on the outside, bill and feet blackish brown. Tarsus plain, with only one scale near the root of the toes.

Wing 5 cm., tail (incomplete) 3,6, culmen 0,9, tarsus 1,5.

Hab. Flores.

The described specimen is, unfortunately, the only representative of this species and at the same time of a genus which hitherto was only known from Australia. Its nearest ally seems to me to be *A. uropygialis* Gould, a species which is not represented in the Leyden Museum, but which has the base of the tail-feathers tawny rufous instead of ashy brown. I have much pleasure in naming this new species after its discoverer, Dr. H. ten Kate.

13. *Munia propinqua* (Sharpe).

Uroloncha propinqua Sharpe, Cat. Birds Br. Mus. Vol. XIII, p. 368.

An adult bird from Sika (Flores). Dr. Sharpe, in his above cited Catalogue, remarks that the specimens from Flores differ from the widely spread *M. molucca* by the want of the black barrings on the sides of the breast, which parts thus form an indistinct white collar, to which I may add that it is only the anterior part of the sides of breast which is left entirely white. The Celebes birds are said to be intermediate, i. e. less barred than those from the Moluccas, but more than the Flores birds, and are mentioned under the head of *M. propinqua*. The present specimen, as well as a Flores specimen in the Museum collection, really show the characteristics pointed to by Dr. Sharpe, characters still more pronounced in our two adult specimens from Sumbawa and another from Timor. All our eight adult Celebes specimens (only North Celebes) and those from Sula seem to me to stand nearer the Moluccan than the Flores and Timor birds, some specimens from Amboina and another from Ceram being as white on the sides of chest as those from Celebes, while none of the latter is as white as the Flores birds. It may be that this is not the case with birds from South Celebes, but all our specimens from the North will certainly be better enlisted with *M. molucca*.

B. BIRDS FROM THE ISLAND OF SUMBA OR SANDELWOOD.

As far as I am aware, Dr. ten Kate is the first who sent zoological collections from this in a certain sense out-of-the-way island. The 32 species of Sumba birds we received, prove the identity of the ornis of Sumba with that of Flores.

1. *Astur torquatus* (Temm.).

Nisus torquatus Schl. Mus. P.-B., Revue Accip. p. 91.

An adult bird of small size, probably a male, with a very broad rufous collar on the hind neck.

Notes from the Leyden Museum, Vol. XIV.

2. *Milvus affinis* Gould.

Milvus migrans (part.) Schl. Mus. P.-B., Revue Accip. p. 126.

Two adult specimens.

3. *Sauropatis chloris* (Bodd.).

Two specimens.

4. *Pitta concinna* Gould.

An adult specimen.

5. *Oriolus broderipi* Bp.

Five specimens.

6. *Mirafra parva* Swinh.

Three specimens. They are only distinguished from the very closely allied Australian form *M. horsfieldi* Gould by the darker color of the upper surface, i. e. the head, hind neck and back, while in size they are equal to the five specimens representing the former species in our collection.

7. *Anthus rufulus* Vieill.

Anthus medius Wall. P. Z. S. 1863, p. 488.

Three specimens.

8. *Acrocephalus australis* Gould.

One specimen.

9. *Cisticola cisticola* (Temm.).

Three specimens.

10. *Pratincola caprata* (L.).

An adult male.

11. *Myiagra rufigula* Wall.

Two specimens.

Notes from the Leyden Museum, Vol. XIV.

12. *Terpsiphone affinis* (Blyth).

Four adult males with the tail-feathers entirely white and also the quills, the latter with the exception of the tips, which are black.

13. *Alseonax latirostris* (Gray).

One specimen, the first instance, I believe, of the occurrence of this species as far east as the Flores-group of Islands.

14. *Culicicapa ceylonensis* (Swains.).

One specimen, probably not fully adult, having some yellow feathers on the gray throat. For the first time recorded from the Flores-group of Islands.

15. *Artamus leucogaster* (Valenc.).

Three specimens.

16. *Artamides floris* Sharpe.

A nestling in very interesting plumage, each feather on head, back, upper wing-coverts, throat and chest being broadly tipped with white, and having before the white tips a subterminal spot of black, giving the bird the appearance of being banded across with white and black. All the quills are broadly tipped and edged with white of a fulvous tinge, the tail-feathers with pure white. The rump is nearly pure white, with but few indications of dark cross-bars; breast, abdomen and under tail-coverts pure white. A broad stripe below the eye, extending from the base of the upper mandible to the ear-coverts, black, very broad at base, feet and claws yellowish white.

17. *Lalage timoriensis* (S. Müll.).

Two adult males, a female and a young bird.

18. *Dissemurus platurus* (Vieill.).

An adult bird, wanting the elongated tail-feathers.

Notes from the Leyden Museum, Vol. XIV.

19. *Tropidorhynchus neglectus* Bütt.

Two adult specimens, both fully agreeing with the types from Sumbawa and Flores, described in N. L. M. 1891, p. 213.

20. *Zosterops aureifrons* Wall.

One specimen.

21. *Dicaeum wilhelminae*, n. sp.

This species, of which the present collection contains only an adult male, is very closely allied to *D. sanghirense* Salvad., from which it differs, however, by its larger size.

Adult male: Whole upper surface, including the sides of the head, cheeks, ear-coverts, sides of neck, lesser and median wing-coverts, upper tail-coverts and tail steel-blue with a faint purplish gloss; quills black, perceptibly glossed with green, the secondaries and greater wing-coverts edged with glossy blue. Under wing-coverts pure white, the inner edge of the quills dingy white. Chin white, the rest, throat and chest scarlet. This scarlet patch is edged below with glossy bluish black; a stripe of the same color, not well defined, runs down the centre of the breast and is flanked on both sides by dingy white, which latter color occupies abdomen, vent and under tail-coverts; sides of body dark ashy gray; bill and feet black.

Wing 54 cm., tail 26, culmen 10, tarsus 13.

Hab. Sumba.

I am much pleased to name this species after her Majesty our youthful Queen Wilhelmina, who, on her recent visit to the Leyden Museum, graciously agreed to accept this dedication.

22. *Stigmatops ocularis* (Gould).

Meliphaga (Ptilotis) limbata S. Müll. Verh. Nat. Gesch. Land- en Volkenk. p. 162.

Stigmatops ocularis Salvad. Orn. Pap. II, p. 323.

Notes from the Leyden Museum, Vol. XIV.

Glycyphila ocularis (part.) Gadow, Cat. Birds Brit. Mus. Vol. IX, p. 213.

Ptilotis limbata Gadow, Cat. Birds Brit. Mus. Vol. IX, p. 236; pl. VII, fig. 2; — Bütt. N. L. M. 1891, p. 214.

Two specimens, one of which is a young bird, having chin, cheeks and a moustachial streak yellow instead of ashy gray.

Count Salvadori (op. cit. p. 324) has already pointed to the identity of S. Müller's *Meliphaga limbata* with *Stigmatops ocularis* (Gould), and a careful comparison of our eleven typical specimens of *S. limbata* with four *S. ocularis* from Australia and two from Aru convinced me that the first are not specifically distinct from the second, though Dr. Gadow even placed them in different genera. One might say that, as a rule, the throat in the specimens from Australia is ashy brown, while it is more ashy gray in the Timor specimens. There are, however, amongst the first, some specimens with the throat as gray as in Timor birds, and I am not able to find, either in coloration or in size, any difference, important enough to separate them even subspecifically. Dr. Gadow mentions as *P. limbata* specimens from Bali, Lombok, Flores and Timor, but he does not say which of these islands is the habitat of the bird figured on his plate VII. The adult specimen of our Sumba birds is very pale yellowish white on breast, abdomen and under tail-coverts and differs in this way considerably from our Timor birds as well as from those from Aru and Australia, while it agrees very well with Dr. Gadow's plate. Although I have no specimens from Flores, Lombok or Bali with which to compare those from Sumba, I feel much disposed to believe that the birds from all the islands west of Timor show the same peculiarities as our adult Sumba bird, and that, consequently, the bird figured by Dr. Gadow on plate VII, fig. 2, is not a Timor bird. The white, yellow-tinged breast, abdomen and under tail-coverts would, if my supposition be correct, be the distinguishing characters of a new species,

Notes from the Leyden Museum, Vol. XIV.

having as habitat the Islands of Bali, Lombok, Flores and Sumba, and most probably Sumbawa, although there are no specimens of *Stigmatops* stated from this latter island as yet.

23. *Cinnyris pectoralis* (Horsf.).

Two unsexed, probably young birds, which are in some way different from all the numerous specimens representing this species in the Leyden Museum. They differ from the females and young birds in having the upper surface dull olive-green, without the yellowish tinge which characterizes the latter, while the lower surface does not show the rich yellow, being more greenish yellow than the latter. Moreover the head and neck are grayish olive, chin and throat olive-green. Wings and tail are as in *C. pectoralis*, the first however rather short, measuring only 4,8 cm., while the bill is rather longer than in most of our specimens from other localities, as it measures 2 cm.

24. *Anthothreptes malaccensis* (Scop.).

An adult female.

25. *Calornis minor* (Bp.).

An adult specimen, probably a female, on account of its crown being tinged with a purplish gloss.

26. *Munia quinticolor* (Vieill.).

Five full-grown young birds, different in color from the adult *M. quinticolor*, I consider to belong to this species, their measurements, as well as the size and form of the bill being precisely the same. The color of these five specimens is brown on the whole upper surface, and pale fulvous on the lower, this latter color being more strongly developed on the chest. The cheeks are marked with very narrow pale shaft-streaks.

Notes from the Leyden Museum, Vol. XIV.

27. *Munia nisoria* (Temm.).

Three adult birds and five young specimens, some of the latter in more or less advanced transitional stage of plumage. All these specimens differ somewhat from the true *M. nisoria* from Java, being sensibly smaller than the average size of the latter, and having the bill also smaller. In the coloration they approach very much the species *M. topela* in being less dark brown above than the Javanese birds, in having the upper tail-coverts and the middle tail-feathers tinged with green, and the feathers on the chest more minutely barred than *M. nisoria*.

Wing 4,8 cm., tail 3,2, tarsus 1,3.

The *Munia*-group which is characterized by a brown throat and dark brown-and-white ocellations on breast and flanks, consists of a few very closely allied species, the young specimens of which do not differ from each other at all. In his Catalogue of the British Museum, Vol. XIII, Dr. Sharpe recognizes only one species of this group: *Munia punctulata* from British India, including Ceylon, and extending eastward to Assam and Cachar, and the subspecies *M. subundulata* from the above mentioned region eastward to Cochin China, *M. topela* from Southern China, Formosa and Hainan, *M. nisoria* from the Malayan Peninsula and Java, and *M. cabanisi* from the island of Luzon.

Of these forms *M. subundulata* is hardly worth recognizing and might be united with *M. topela*.

Munia punctulata (L.), of which our collection contains five specimens, may easily be distinguished from all the allied forms by the fulvous tinge of the upper tail-coverts and central tail-feathers, which color is strongly yielding to golden yellow. The general color on the upper surface is brown, with a rufous tinge, the latter color prevailing on the front. Sides of face deep chestnut brown, getting paler towards the sides of neck and very sharply defined towards the chest. The rump is strongly barred with dark olive-brown, and the lower surface, with the exception

Notes from the Leyden Museum, Vol. XIV.

of the uniform white centre of the body, strongly mottled with large white spots, forming well-distinguished, broad cross-bars on some feathers of the flanks. *M. topela* Swinhoe, with which I should propose to unite *M. subundulata* Godwin-Austen, is easily distinguished from *M. punctulata* by the much paler, more olive-brown tinge of the upper surface, by the very indistinct dark barring of the rump, the pale olive-green instead of fulvous upper tail-coverts and middle tail-feathers, by the want of the brown on forehead and sides of the face, the lesser extent of the brown color on the throat, and by the less large and less rounded white markings on breast and flanks, while the brown markings on both these latter parts are paler brown. The number of our Museum specimens, which I range in this subspecies, is 13, most of which are from Formosa, while a few are from Moulmein, Cochin China and China (*M. subundulata*).

The Javanese specimens, all belonging to *M. nisoria* (Temm.), agree with *M. punctulata* in the brown color of the upper surface, the dark double barring of the rump and the large white ocellations on breast and flanks, but differ from it in the larger extent of the brown on the throat, which reaches partly down upon the chest, not ending as abruptly as in the former species. The most distinctive character, however, is the color of the upper tail-coverts and the innermost tail-feathers, which is ashy gray with a very faint tinge of olive. This species is represented by twelve specimens from Java.

M. cabanisi Sharpe, from Luzon, is not represented in our collection, but there are six adult specimens from the island of Bourbon. The bird is found in a wild state on that island, but is said to have been introduced and is mentioned as *M. punctulata* by Hartlaub (die Vögel Madagascars, p. 403), while Sharpe states, in his Catalogue, the occurrence of *M. nisoria* on the island of Mauritius. Our specimens from Bourbon agree entirely with *M. nisoria* from Java, with the exception of the upper tail-coverts and centre tail-

Notes from the Leyden Museum, Vol. XIV.

feathers, which are not ashy gray, but sensibly tinged with pale olive-green, in which character they agree with *M. topela*. They are, however, undoubtedly to be united with *M. nistoria*.

To *M. nistoria* also belong an adult and a young bird from the lake of Toba, Central Sumatra, collected by Dr. B. Hagen, though they seem to be in some way intermediate between it and *M. punctulata*, having the brown on the throat not extending as far down on the chest as in the Javanese bird. The immature specimens, mentioned by me in N. L. M. 1887, p. 71, with a query under the name of *M. punctularia*, will certainly also belong to *M. nistoria*, since Count Salvadori, Ann. Mus. Civ. Genova, 1892, p. 31, refers the specimens from West Sumatra to this species.

28. *Sporaeginthus flavidiventris* (Wall.).

Three young specimens.

29. *Megapodius duperreyi* Less.

Megapodius reinwardti Wall. P. Z. S. 1863, p. 487.

An adult specimen.

30. *Charadrius geoffroyi* Wagl.

An adult specimen.

31. *Numenius variegatus* (Scop.).

An adult specimen.

32. *Tringa minuta* Leisler.

Two specimens.

C. BIRDS FROM THE ISLAND OF ROTTI.

1. *Oreicola melanoleuca* (Vieill.).

An adult female.

Notes from the Leyden Museum, Vol. XIV.

2. *Rhipidura tenkatei*, n. sp.

Closely allied to *R. buruensis*, but differs principally in having the abdomen paler and the outer tail-feathers broadly tipped with white.

General color above dark slaty gray, somewhat tinged with olive-brown, crown and sides of the head much darker, a concealed patch of silky white feathers above the eye, wing-coverts like the back, the greater ones and the primary coverts tipped with dirty white, probably indicating a certain stage of immaturity, quills sooty brown, the secondaries on the outside very narrowly fringed and more broadly tipped with brownish white, upper tail-coverts glossy brownish black like the crown; tail black, the terminal third (2,3 cm.) of the outermost pair of tail-feathers pure white, which color occupies also the outer web and the shaft nearly up to the base, the second pair with an oval white terminal spot of the length of 1,5 cm., leaving, on the outer web, a black edge nearly reaching down to the tip, third pair with a wedge-shaped, narrow white spot at the tip, three innermost pairs uniform brownish black. Chin, throat and chest dark ashy gray, the first minutely, the two latter largely spotted with white on the centre of the feather, as is the case in *R. buruensis*; breast, abdomen and flanks very pale fulvous, under tail-coverts almost pure white, under wing-coverts dark ashy, broadly tipped with the color of the breast, inner edge of quills pale ashy, bill and feet black.

Wing 7,6 cm., central tail-feathers 8, outermost 7, culmen 1,6, tarsus 1,6.

Hab. Rotti. One specimen.

3. *Dicaeum mackloti* Müll. & Schl.

A young bird, probably a female, showing on the lesser wing-coverts some glossy feathers of the plumage of the adult stage; rump and upper tail-coverts lively

Notes from the Leyden Museum, Vol. XIV.

orange-red instead of scarlet, probably from the influence of the alcohol in which it was preserved. Underneath uniform ashy white.

4. *Glareola grallaria* Temm.

An adult specimen.

5. *Himantopus leucocephalus* Gould.

Two specimens.

Leyden Museum, May 1892.

NB. Cf. NOTE XXXVII. The birds of Sumba
by A. B. Meyer.

NOTE XXXIII.

DEUX NOUVEAUX GENRES
ET DEUX NOUVELLES ESPÈCES DU GROUPE
DES RHYNCHOPHORIDES

DÉCRITS PAR

W. ROELOFS.*Iphtimorhinus*, n. g.

Corps oblong, épais, élytres subparallèles.

Rostre très robuste, gibbeux, fortement arqué, plus haut que large et quadrangulaire dans sa majeure partie, aminci et aplati vers l'extrémité, un peu déprimé et sans échancrure au dessus de la bouche. Mandibules triangulaires, à pointe obtuse et présentant une dent peu saillante sur leur tranche intérieure. Les fissures à côté du pédoncule peu larges et peu profondes. Scrobes rapprochés de la base, fovéiformes.

Antennes assez longues, scape dépassant beaucoup le bord antérieur du prothorax, presque du double plus long que le funicule; les articles du dernier décroissant graduellement, le premier turbiné, les cinq suivants peu à peu plus globuleux et transversaux, présentant un étranglement annulaire à leur bout, le sixième sensiblement plus gros; la massue triangulaire, sa partie spongieuse pas saillante. Tête globuleuse; yeux très finement granulés ¹⁾.

Prothorax aussi long que large, peu convexe, arrondi

1) Il est impossible de voir, jusqu'à quel point les yeux sont rapprochés en dessous, par la rétraction de la tête dans le prothorax.

sur les côtés, assez brusquement rétréci et muni d'un profond sillon circulaire en avant, bisinué à la base.

Ecusson en triangle arrondi, déprimé au milieu.

Elytres d'un tiers plus longues que larges, leurs épaules obtuses, leurs côtés presque parallèles, leur extrémité isolément arrondie.

Pattes robustes, cuisses fortes, ainsi que les jambes un peu comprimées, les jambes mucronées au bout; deux premiers articles des tarsi petits; le premier un peu allongé et creusé en dessous; le troisième grand et largement cordiforme, tous les articles spongieux en dessous.

Pygidium déclive, en triangle arrondi, convexe, légèrement échancré à l'extrémité.

Prosternum court, avec deux lobes rapprochés, courts, gros, et saillants derrière les hanches antérieures, couvrant moins le mésosternum que chez *Rhynchophorus*.

Saillie intercoxale de l'abdomen droite; deuxième segment abdominal plus grand que les deux suivants, séparé du premier par une suture droite.

Iphthimorhinus australasiae, n. sp.

Long. 34 millim. rostr. excl. — D'un rouge-brun velouté avec des taches noires en dessus, noir varié de rouge-brun en dessous et sur les pattes. Antennes noires.

Rostre nettement séparé de la tête, muni d'une impression large et longitudinale, partant de la base, graduellement effacée en avant. Funicule et massue des antennes avec quelques poils courts et bruns. Tête ponctuée derrière les yeux et plus fortement sur l'arrière du vertex.

Prothorax avec son bord antérieur étranglé noir, un trait court, peu marqué, au milieu du disque, une tache triangulaire à la base, à la place de son sinus, et une tache transversale, allongée, au dessus des hanches antérieures, de la même couleur. Ecusson noir.

Elytres avec six stries imponctuées entières, trois stries

Notes from the Leyden Museum, Vol. XIV.

sur leurs côtés n'atteignent pas la base; les intervalles des stries larges. Une tache noire se trouve au milieu du quatrième intervalle, la suture est un peu noirâtre, ainsi que l'extrémité.

Le pygidium est rougeâtre à la base, noir sur le reste, vaguement ponctué et paraît, vu dans un certain jour, couvert d'une efflorescence grisâtre.

Le prosternum, le métasternum en dessous et le premier segment de l'abdomen au milieu, sont rouges; cette couleur s'étend un peu plus sur le second segment, le reste du corps est noir. Le prosternum est assez finement ponctué en dessous et sur les côtés. Le mésosternum, d'un noir luisant, porte sur l'épisternum quelques points gros et distants. Le métasternum et les deux premiers segments de l'abdomen sont couverts d'une grosse ponctuation, devenant plus fine sur les côtés du premier segment et sur le reste de l'abdomen, où les points ont chacun un petit poil brunâtre. Le corps, vu dans un certain jour, offre une apparence grisâtre, analogue à celle du pygidium.

Les pattes sont rouges à l'exception de l'extrémité des cuisses qui est noire. Les tarses sont noirâtres. Les pattes vaguement ponctuées; la tranche intérieure des jambes est munie d'une rangée de poils bruns, très courts.

Un individu du Musée de Leyde, originaire de Queensland et présenté par Mr. Ploos van Amstel. Deux individus de la collection Neervoort van de Poll, du même pays.

L'anatomie d'un de ces deux derniers exemplaires a démontré que cette forme est celle du sexe féminin.

Cette grande et belle espèce rentre dans un genre nouveau et bien caractérisé dans le même groupe que *Rhynchophorus* Herbst. Comme dans ce dernier genre, les mandibules n'ont point de lobe recourbé en dehors. Le rostre, d'une grosseur remarquable et fortement courbé, la massue des antennes qui n'est pas sécuroïde mais triangulaire, le prosternum autrement formé, joint aux autres caractères énumérés dans la formule du genre, le distinguent bien des genres voisins.

Notes from the Leyden Museum, Vol. XIV.

Abrachius, n. g.

♂. Ovale-allongé.

Rostre moins long que le prothorax, robuste, légèrement arqué, très peu grossi à la base, un peu élargi vers l'insertion des antennes, creusé en dessous; sa partie creusée graduellement rétrécie en forme de rainure vers la base. Mandibules larges à leur base, courbées en dedans et en bas, sans lobe extérieur. Scrobes en fossette un peu allongée.

Antennes insérées vers le tiers basilaire du rostre; leur scape dépassant le bord antérieur du prothorax, un peu plus long que le funicule, celui-ci de six articles, les deux premiers les plus longs, le deuxième plus long que le premier, les suivants transversaux et graduellement plus larges, massue triangulaire, sa partie spongieuse assez saillante.

Prothorax peu convexe, aussi long que large à la base qui est un peu avancée au milieu, légèrement sinuée et oblique à côté. Les côtés du prothorax se rétrécissent faiblement jusque près du bord antérieur, qui est tubuleux comme dans le genre *Rhynchophorus*.

Ecusson en triangle arrondi au bout.

Elytres de la largeur du prothorax à leur base, leurs épaules effacées, s'arrondissant un peu sur les côtés, sans se rétrécir en arrière, isolément arrondies à l'extrémité.

Pygidium en triangle arrondi, un peu déprimé.

Prosternum avec deux petits lobes aplatis, rapprochés, derrière les hanches antérieures.

Saillie de l'abdomen droite. Le mucro des jambes peu développé. Articles des tarsi spongieux en dessous, le premier de longueur médiocre, le dernier triangulaire.

♀. Rostre aussi long que le prothorax, plus largement et profondément creusé en dessous que celui du mâle, le pédoncule se relie à une faible carène médiane, les bords sont un peu crénelés et s'abaissent vers la bouche, leur extrémité est courbée en bas. Les fissures à côté du pédoncule sont plus longues que chez le mâle. Le prothorax

Notes from the Leyden Museum, Vol. XIV.

et l'écusson plus longs, le pygidium plus convexe et la dépression du métasternum et des premiers segments de l'abdomen plus forte.

Abrachius insularis, n. sp.

♂, 14 millim.; ♀, 16 millim. rostr. excl. — D'un noir lavé de rouge-pourpre foncé, luisant en dessous et sur les pattes, noir et rouge-pourpre foncé velouté en dessus.

Rostre noir-rougeâtre, rugueusement ponctué à la base, plus finement vers le bout, avec une impression allongée entre les yeux. Antennes noires, funicule et massue avec quelques poils jaunâtres. Tête rouge, finement ponctué sur le vertex.

Prothorax rouge-pourpre velouté, sa partie étranglée antérieure noire. Cette même couleur couvre le prosternum et s'étend en tache transversale au dessus des hanches antérieures. Les côtés du prosternum sont obsolètement ponctuéés. Ecusson noir, déprimé au milieu.

Elytres noires à la base et en arrière, rouges-pourpre au milieu, cette couleur en s'étendant sur leurs côtés remonte un peu vers le devant. Une substance, difficile à définir, de couleur brune, garnit leur extrémité et s'élargit sur l'angle extérieur. Les élytres ont des stries imponctuéés, larges et profondes à la base, graduellement plus fines en arrière, leurs intervalles sont larges et plans; les six stries intérieures de chaque élytre sont plus larges que les stries latérales; vers le huitième intervalle se voit sur l'épaule un espace un peu saillant et luisant.

Le pygidium est rouge à la base et garni chez le mâle de la même façon que l'extrémité des élytres; il porte quelques poils bruns au bout.

Dessous ponctué, le milieu du métasternum lisse. La couleur noire, lavée de rouge-pourpre, est la couleur générale du dessous et des pattes; le métasternum est plus rouge au milieu, ses côtés sont d'un noir mat. Les trois

Notes from the Leyden Museum, Vol. XIV.

derniers segments de l'abdomen sont garnis vers leur extrémité à la façon du bout des élytres. Cette vestiture est presque absente chez le mâle. Chez celui-ci les pattes sont peu densément garnies de poils jaunâtres sur leur tranche intérieure.

Le genre est voisin de *Rhynchophorus*, mais s'en distingue surtout par la forme du rostre, plus robuste et gardant presque la même grosseur partout. La forme générale de l'insecte est plus régulièrement ovale et moins rétrécie en arrière.

L'espèce habite les îles Arou. — Un individu du Musée de Leide est un ♂ qui provient des voyages du Baron von Rosenberg; un autre, de la collection Neervoort van de Poll, est une ♀ et étiquetté : »Aru-Ins., Urejuning, C. Ribbe, 1884."

La Haye, Avril 1892.

NOTE XXXIV.

THREE NEW SPECIES OF THE LONGICORN
GENUS PACHYTERIA

DESCRIBED BY

C. RITSEMA Cz.

Pachyteria Pasteuri, n. sp. ♂.

Resembling *Pachyteria Lambii* Pasc. from Penang or from the coast opposite the island, judging from the description and figure ¹⁾, but in the new species the colors are darker and the punctuation of the bright colored basal half of the elytra is less dense.

Length from the front margin of the inter-antennary ridge to the apex of the elytra 24 mm., breadth at the shoulders 8 mm. — Nearly glabrous, subnitid. The head and the pronotum very dark reddish brown, brighter however on the face and on the base of the mandibles; the four basal joints of the antennae, as well as the extreme base of the 5th joint, black, the 3rd and the 4th joint covered with a black velvety pubescence; the 5th and succeeding joints pale ochreous. — The scutellum blackish brown. — The basal half of the elytra reddish ochraceous ²⁾ with two dark longitudinal lines, indicating the costae; the apical half black with faint metallic tinges

1) Proceed. Zool. Soc. London, 1866, p. 519; pl. 43, fig. 6.

2) This color is slightly continued backwards along the suture.

and covered with a short black pubescence. — Body underneath and legs black, with blue and violet tinges; the anterior tibiae covered on the inside and the anterior tarsi covered above with an ochraceous pubescence.

The head is strongly but not densely punctured with the exception of the pubescent inter-antennary ridge which has a very fine and dense punctuation; a narrow and deep groove runs from the base of the clypeus up to the vertex where it ends in a smooth space; the sides of the mandibles have a few fine punctures near the base. The antennae are rather short and stout, reaching slightly beyond the middle of the black apical half of the elytra; the scape is densely punctured, and provided on the frontside with a shallow longitudinal groove; the 3rd joint nearly as long as the 4th and 5th taken together, the following slightly decreasing in length, the apical one, however, somewhat longer than the penultimate.

The raised disk of the pronotum is covered with rather regular and partly confluent transverse wrinkles which on the basal half are interrupted in the middle by a smooth space; the interspaces between the wrinkles are provided with large punctures; the anterior constricted portion is followed in the middle by a broad and smooth semilunar impression; the middle of the sides is armed with a strong toothlike angle which is smooth. The scutellum is of a regular triangular shape with very acute apex; it is impressed along the middle and covered with distinct punctures.

The elytra taper gradually from a little beyond the shoulders; the apices are narrowly and separately rounded and consequently dehiscent; the ochraceous basal half is not closely covered with large punctures which bear a short uncolored hair; on the black colored apical half the punctuation is fine and dense and covered with a short black pubescence.

The under surface of the head and prothorax is transversely wrinkled; the meso- and metasternum are very

Notes from the Leyden Museum, Vol. XIV.

finely and densely punctured on the sides, but towards the middle (which shows an impressed longitudinal line) the punctures become larger and wider apart; the intercoxal part of the pro- and mesosternum is formed as in the majority of the species (no tubercle with V-shaped recess); the abdomen is finely and distantly punctured; the 5th ventral segment faintly emarginate, with broadly rounded hind angles; the legs are strongly punctured, and the posterior femora reach beyond the apices of the elytra.

Hab. Nias Island. — A single specimen, presented to the Leyden Museum by Mr. J. D. Pasteur to whom the species is dedicated.

Pachyteria lugubris, n. sp. ♂.

Easily distinguished by its dark coloration being entirely greenish- or bluish black, with the intermediate antennal joints partly brownish yellow and the elytra provided, a little beyond the middle, with a narrow transverse band of pale yellowish hairs; the prothorax is not at all armed at the sides.

Length from the anterior margin of the inter-antennary ridge to the apex of the elytra 32 mm., breadth at the shoulders $9\frac{1}{4}$ mm. — Above opaque and of a greenish black color, the legs subnitid and, as well as the metasternum, dark blue with faint green tinges; sparsely covered with extremely short black hairs which, however, are closely set on the inter-antennary ridge, on the front- and basal margin and the disk of the pronotum, on the scutellum and across the middle of the elytra giving these parts a velvety appearance. In the velvety streak of the elytra, a little beyond their middle, a very narrow sinuate band of pale yellowish hairs is present, which touches neither the suture nor the lateral margins. The apical half of the 3rd antennal joint, the entire 4th, 5th and 6th, as well as an apical spot on the inner side of the 7th joint

brownish yellow, partly (from abrasion?) covered with short black hairs; the anterior tibiae covered on the inside with an ochreous pubescence, the coxae, the mesosternum, the hind margin of the metasternum and that of the ventral segments with a dense silvery pile.

The head is rugosely sculptured on the vertex and behind the eyes, but these rugose regions are separated by a smooth, sparsely punctured space; the space between the under margin of the eyes and the base of the mandibles smooth, sparsely punctured; the inter-antennary ridge is densely covered with a fine sculpturing and with short black hairs, and is separated from the clypeus by a smooth space with raised lateral margins and divided by an impressed line which extends down to the base of the clypeus; the clypeus itself is convex in a transverse direction, rather densely covered with punctures on its basal half, the punctures decreasing in number and size towards the contracted front portion which is impunctate and of a bright chestnut color; the labrum is short, strongly transverse and finely punctured; the sides of the mandibles are strongly punctured on their basal half, very finely on the apical one. The antennae are proportionately short, reaching hardly to the elytral band, and considerably thickened in the middle; the scape is rather short, toothed at the apex, strongly and densely punctured and with a shallow roundish impression at the base in front; the 3rd joint is slightly curved and becomes gradually thicker towards the end, it is not quite so long as the 4th and 5th taken together, the 4th—7th subequal, the following joints slightly decreasing in length, but the apical joint again somewhat longer.

The prothorax large; the sides without any trace of spine or tooth, slightly converging towards the front margin, much more broadly rounded towards the base than anteriorly; the front- and basal margin bisinuate; the disk flat, scabrous, bordered anteriorly, at some distance from the front margin, by a transverse line which is en-

larged and impunctate in the middle, at the sides by an oblique line which is deeply impressed in the middle, and at the base by a smooth transverse line; moreover a trace of a central longitudinal line may be observed. The under surface of the prothorax is finely, evenly and very densely punctured, forming a dull lustreless surface which, at the sides, extends up to the oblique line of demarkation of the disk, but leaving free the contracted front portion which is finely wrinkled, and the intercoxal part which is covered with a silvery pile. The scutellum is rather broad, the sides slightly converging, suddenly narrowed a little before the end.

The elytra are gradually narrowing towards the apices which are conjointly rounded; their surface is scabrous, but the sculpturing becomes finer and finer towards the end; traces of longitudinal costae are present at the base.

The intercoxal part of the prosternum is rounded, convex along the middle and has slightly raised edges, that of the mesosternum is angularly impressed anteriorly, shallowly grooved along the middle and broadly notched behind. The metasternum is distantly covered with large and with small punctures and has an impressed line along the middle. The legs are punctured, the posterior ones more strongly than the others. The abdomen without distinct punctures; the 5th ventral segment broadly and deeply emarginate, the 6th broadly but less deeply. The apical dorsal segment is triangular, and minutely notched at the tip; it is punctured but has a smooth line along the middle.

Hab. Nias Island. — A single specimen, presented to the Leyden Museum by Mr. J. D. Pasteur.

N. B. This is the third *Pachyteria*-species known from Nias; the first species described from that island is *Pachyteria niassensis* Gahan (Notes from the Leyden Museum, Vol. XII, 1890, p. 161).

Notes from the Leyden Museum, Vol. XIV.

Pachyteria borneoensis, n. sp. ♂.

No doubt this species is closely allied to *Pachyteria insignita* Pasc. from Penang or from the coast opposite the island ¹⁾, but differs from it in the distribution of the colors on the elytra and antennae, whereas nothing is said in the description about the particular sculpturing of the prosternum, which I observe in the specimen before me.

Length from the anterior margin of the inter-antennary ridge to the apex of the elytra 36 mm., breadth at the shoulders 11 mm. — Above subopaque, covered with minute hairs which are of the same color as the derm whereon they occur; beneath subnitid, the coxae, sides of meso- and metasternum and hind margin of the three basal ventral segments covered with a glithering greyish pile; the bands on the ventral segments strongly narrowed or interrupted in the middle. — The head, prothorax and scutellum black, the former however with the exception of the luteous labrum, mandibles ²⁾, palpi and upper margin of the antennary tubers; the six basal joints of the antennae luteous, the remaining five black, the 7th however brown on the inside; the smaller basal half of the elytra luteous, the larger apical half black with a green tinge; underneath black with metallic blue tinges on the metasternum and abdomen; the legs luteous with the coxae partly and the larger apical half of the posterior femora (with the exception of the extreme apex) black, the intermediate femora with an infusate spot on the hinder surface of the swollen portion.

The head rugosely punctured on the vertex and behind the eyes, the cheeks with a few large punctures, the sides of the mandibles finely punctate; the inter-antennary ridge divided by a narrow but deep groove, very finely punctured above, irregularly punctured in front, the large

1) Proceed. Zool. Soc. London, 1866, p. 520.

2) The tips of the mandibles are dusky.

punctures confluent in a longitudinal direction; the clypeus rather distantly punctured; the labrum large, deeply emarginate anteriorly, finely and sparingly punctured. The antennae slender, the scape short, rather strongly but not densely punctured, sharply spined at the top and provided, inwardly from the spine, with an infusate round spot; the 3rd joint not quite so long as the 4th and 5th together, the 4th—6th equal in length to one another, the remainder slightly decreasing in length, the apical joint, however, decidedly longer than the penultimate one.

The prothorax broad, its sides rounded anteriorly and strongly angulated behind the middle; the angle terminating in an acute point; the raised disk finely rugose, densely covered with a velvety black pubescence, with a smooth space at the middle of the base, the upper surface of the lateral angles smooth, almost impunctate; the contracted anterior- and basal portion irregularly wrinkled and punctate. The under surface of the prothorax is very densely and evenly punctured, forming a dull lustreless surface which is also to be seen from above between the front margin and the tip of the lateral angles; the contracted front portion is transversely wrinkled, the intercoxal part sparsely punctured. The scutellum triangular, slightly longer than broad at the base, densely covered with a black pubescence.

The elytra slightly narrowing towards the apices which are emarginate; they are densely covered with punctures which decrease in size towards the end, and show each three slightly raised smoother costae.

The metasternum and abdomen have large punctures irregularly scattered over the surface, and along the middle of the former a fine raised line is present. The 5th ventral segment is broadly and deeply emarginate behind; the 6th segment, which is narrower and in the middle impunctate, faintly emarginate. The femora are strongly punctured, the tibiae much more finely so. The intercoxal

part of the pro- and mesosternum without tubercle and V-shaped recess.

Hab. Sagoo near Sarawak (Borneo). — A single specimen in the collection of Mr. René Oberthür.

Leyden Museum, March 1892.

POSTSCRIPT. A new species of the allied genus *Zonopterus* has been recently described by Mr. A. F. Nonfried, viz. *Zonopterus Redemanni* Nonfr., from Ceylon. (Deutsche Entomologische Zeitschrift, Jahrg. 1891, 2^{tes} Heft ¹⁾, S. 274).

1) Published in March 1892.

NOTE XXXV.

TWO NEW SPECIES OF THE LONGICORN
GENUS GLENEA

DESCRIBED BY

C. RITSEMA Cz.

Glenea florensis, n. sp. ♂ and ♀.

Length of the ♂ 22 mm., breadth at the shoulders 6,5 mm.; length of the ♀ 27 mm., breadth at the shoulders 8,5 mm. — Black, covered with a black velvety pubescence, and provided with markings of short white hairs.

The head with a faint purplish hue and provided with two white stripes on the face, bordering the inner orbits and joining the anterior basal angle of the mandibles; with a white transverse band behind the base of the eyes and with two closely approximated stripes on the vertex, running from between the antennary tubers to the front margin of the thorax and being suddenly constricted in the middle¹⁾. The head is sparsely and irregularly covered with large and deep punctures. The antennae are covered with a dense whitish pile and the derm of the three basal joints is dark purplish black.

The prothorax is much narrower than the base of the elytra, subcylindrical, slightly narrowing in straight lines to the front and showing a purplish hue; its upper surface is not very closely covered with large and deep punctures and provided with three longitudinal white stripes, viz. a narrow median one (interrupted in the middle) and

1) In the male specimen the stripes on the vertex are obsolete.

two broader lateral ones; just above the coxae another broad white stripe, continuous with the postocular stripe of the head, is present. The scutellum is somewhat elongate triangular with curvilinear sides and densely covered with a white pubescence.

The elytra, which are much broader at the base than the thorax, taper in straight lines from the angular shoulders to the end which is truncate and provided with four spines of which the external ones are slightly larger than those at the suture; the front margin of the shoulders is straight and slightly directed backwards. The disk of the elytra is densely covered with large and deep punctures which, however, become evanescent towards the end; on the deflexed sides the punctures are arranged in rows. The disk of the elytra is provided with the following white markings: a sutural stripe on the apical half common to both elytra and divided by the suture; four elongate ovate spots on the middle of the basal half (two spots on each elytron) of which the two innermost are placed nearer to the base than the two outermost; a more or less square spot just before the middle of each elytron touching neither the suture nor the lateral carina; an elongate ovate spot on the middle of the apical half closely approximated to the lateral carina, and finally a spot on the extreme apex of each elytron.

The sterna, abdomen and legs have vived purplish and blue tinges; the sterna are white on the sides; the abdomen has four rows of white spots (in the ♂ the two rows on each side are united along the hind margin of the segments), and the legs, especially the tibiae and the tarsi, are covered with a greyish pile.

Hab. The island of Flores. — A male and a female in the collection of Mr. René Oberthür.

Glenea Oberthüri, n. sp. ♀.

Length 25 mm., breadth at the shoulders 7 mm. — Metallic bluish green, subnitid, provided with stripes and

Notes from the Leyden Museum, Vol. XIV.

spots of a dense white pubescence, the head bronze green, the legs reddish brown, the anterior and intermediate tibiae and tarsi black.

The head sparsely punctured, the punctures large and deep; with two white stripes on the face bordering the inner orbits and joining the base of the mandibles, a white spot behind the lower lobe of the eyes, and four white stripes on the vertex: two in the middle closely approximate, beginning in front of the antennary tubers and slightly diverging posteriorly, and two laterally behind the insertion of the antennae. The three basal joints of the antennae bluish black and subnitid, the remainder dull black, with a greyish lustre in certain lights especially along the under surface.

The prothorax is much narrower than the base of the elytra, slightly broader in front than at the base, with a deep furrow at the sides near to and parallel with the base and another shallower and narrower one closely approximate to the front margin; its upper surface irregularly covered with large and deep punctures, and with a short basal median keel showing an impressed line; the disk is provided on each side with a longitudinal white vitta and with two white spots on the middle-line, one (the largest) touching the front-, the other (bilobed) touching the basal-margin; just above the anterior and intermediate coxae another white band is present. The scutellum is broad, broadly rounded at the tip and covered with a dense white pubescence.

The elytra, which are much broader at the base than the thorax, taper slightly backwards in straight lines and are flattened on the sutural region; the basal margin is straight, the shoulders are angular and have a small knob on the tip; the apices are emarginate, sharply spined externally, the sutural angle narrowly rounded; the disk of the elytra is densely covered with large and deep punctures, which however become evanescent towards the end; along the deflexed portion the punctures are placed in two

Notes from the Leyden Museum, Vol. XIV.

regular rows, but along the middle of the disk they are more irregular, and these two regions are separated from each other by a slightly raised smooth keel; on the deflexed sides the punctures are likewise arranged in rows. Each elytron is provided with five large white spots arranged in the following manner: a large roundish spot quite at the middle of the length; between this spot and the base two similar spots of which the basal one (not touching however the basal margin) is slightly elongate; these three spots are placed midway between the suture and the carina bordering the deflexed side; an ante-apical oblique spot, and between this latter and the central spot, but more outwardly and touching the carina, an ovate spot which is prolonged forward into a stripe covering the innermost row of punctures as far as the front margin of the second spot; white hairs are also present between the carinae of the deflexed side.

The sides of the metasternum and of the abdomen are covered with a dense white pubescence, and the anterior and intermediate tibiae, as well as the tarsi of the three pairs of legs, with a greyish pile.

Hab. East Java: Mount Ardjoeno. — A single female specimen in the collection of Mr. René Oberthür.

Leyden Museum, June 1892.

NOTE XXXVI.

CARCINOLOGICAL STUDIES IN THE LEYDEN MUSEUM

BY

Dr. J. G. de MAN.

Nº. 6. ¹⁾
(Plates 7—10).

LIST OF SPECIES.

<i>Xantho lividus</i> Lam.	<i>Geotelphusa loxophthalma</i> , n. sp.
» <i>Reynaudii</i> M. E.	<i>Sesarma Eydouxii</i> M. E.
<i>Eurycarcinus orientalis</i> A. M. E.	» <i>recta</i> Randall.
<i>Pilumnopus crassimanus</i> A. M. E.	» <i>angustipes</i> Dana.
<i>Heteropanope tridentata</i> Maitland.	» <i>elongata</i> A. M. E.
<i>Geotelphusa picta</i> v. Mart.	» <i>curaçaoensis</i> , n. sp.
» <i>transversa</i> v. Mart.	<i>Caridina japonica</i> , n. sp.
	<i>Hippolyte ponapensis</i> Ortmann.

1. *Xantho lividus* Lam.

Xantho lividus, H. Milne Edwards, Histoire Nat. des Crustacés, T. I, p. 393.

The cephalothorax of this rare species that occurs on the shores of Mauritius, is rather much enlarged and its lateral margins are armed with four teeth behind the external orbital angles which are not at all prominent. The first tooth is the largest, has the form of a bluntly rounded lobe and projects far beyond the external orbital angles;

1) See for Nº. 1 and 2: Vol. III, p. 121 and p. 245; for Nº. 3: Vol. V, p. 150; for Nº. 4: Vol. XII, p. 49, and for Nº. 5: Vol. XIII, p. 1.

the second is somewhat smaller, and the third and fourth are the smallest, much narrower, and therefore appear more dentiform. The ambulatory legs are densely provided with long hairs. I examined this species in the Museum of Paris.

2. *Xantho Reynaudii* M. E.

Xantho Reynaudii, Milne Edwards, l. c. T. I, p. 392.

I examined in Paris a specimen of this *Xantho*, which was collected in China. The cephalothorax is rather little enlarged and the front is narrow. The measurements are the following:

Greatest width of the cephalothorax (i. e. the distance between the last antero-lateral teeth).	59 $\frac{1}{2}$	mm.
Length of the cephalothorax, the front included	44	»
Distance between the external orbital angles.	25	»
Breadth of the front	15	»

3. *Eurycarcinus orientalis* A. M. E.

Eurycarcinus orientalis, A. Milne Edwards, Descriptions de quelques espèces nouvelles de Crustacés brachyures, in: Annales Soc. Entomol. de France, T. VII, 1867, p. 277.

In my "Report on the Crustacea of the Mergui Archipelago" (Journal of the Linnean Society of London, Vol. XXII, 1888, p. 43), I have made the supposition that *Eurycarcinus integrifrons* de Man, of which the habitat is unknown, might prove to be identical with *Euryc. orientalis* A. M. E., a species from Bombay. An exact examination of the typical specimen in Paris taught me, however, that these two species are indeed distinct. The cephalothorax of *Euryc. orientalis* is comparatively somewhat more enlarged, as may be seen by comparing the dimensions of the two species. The front of *Euryc. orientalis* is not straight, as in *Euryc. integrifrons*, but presents a rather broad, triangular emargination in the middle.

Notes from the Leyden Museum, Vol. XIV.

In *Euryc. integrifrons* the two anterior lobes of the lateral margins of the cephalothorax have the same size, but in the Bombay species the second antero-lateral lobe is a little longer than the first.

The measurements of a male type-specimen of *Eurycarcinus orientalis* from Bombay are the following:

Breadth of the cephalothorax	26 ² / ₅ mm.
Length » » »	16 »
Distance between the external orbital angles .	13 ¹ / ₃ »

The cephalothorax of a male individual of *Eurycarcinus integrifrons* de Man, however, is 20 mm. broad and 14 mm. long (confer: Notes from the Leyden Museum, 1879, Vol. I, p. 56).

4. *Pilumnopus crassimanus* A. M. E.

Pilumnopus crassimanus, A. Milne Edwards, Descriptions de quelques espèces nouvelles de Crustacés brachyures, in: Annales Soc. Entom. de France, T. VII, 1867, p. 278.

It appears to me highly probable that this species is identical with *Heteropanope serratifrons* Kinahan (confer: de Man, in: Notes from the Leyden Museum, Vol. XII, 1890, p. 56; pl. 3, fig. 2). The typical specimen of *Pilumnopus crassimanus* from Port Western, that I examined in Paris, presents the following measurements:

Greatest width of the cephalothorax	25 mm.
Length of the cephalothorax, without the frontal lobes	17 »
Length of the cephalothorax, with the frontal lobes	17 ¹ / ₂ »
Distance between the internal orbital angles .	8 ¹ / ₂ »
Length of the larger chela, fingers included .	19 ¹ / ₂ »
Length of the palm	12 »
Height of the palm near the articulation with the fingers	11 ³ / ₄ »

I must remark that the number 25 (greatest width) is

Notes from the Leyden Museum, Vol. XIV.

perhaps not quite exact and may be a little too high. The distance between the internal orbital angles is just half as long as the length of the cephalothorax, quite as in *Heterop. serratifrons*, and as regards the other proportions, both species likewise agree with one another.

5. *Heteropanope tridentata* Maitland.

(Fig. 1).

Pilumnus tridentatus, Maitland, Naamlijst van Nederlandsche Schaaldieren, in: Tijdschrift der Nederlandsche Dierkundige Vereeniging, Deel I, 1873, p. 232. — Hoek, iets over *Pilumnus tridentatus* Maitland, in: Tijdschrift der Nederlandsche Dierkundige Vereeniging, Deel II, 1876, p. 243; pl. XIV, fig. 12—16.

Heteropanope tridentata, de Man, in: Zoolog. Jahrbücher von J. W. Spengel, Bd. IV, 1889, S. 422.

This interesting species, hitherto only known from Holland, was first distinguished and shortly described by Maitland. It is found in the Zuiderzee, not only on its shores, but also near the island of Urk, further in the IJ near Amsterdam and in the Hollandsch Diep. It occurs however not only in seawater, but also in brackish and even in fresh water. Maitland indeed observed these crabs in a freshwater ditch near Haarlem and Hoek found them in the river Amstel and even near the village of Uithoorn at a distance of five hours from Amsterdam and from the seashore. Some time ago Mr. Maitland was so kind as to procure me some specimens of this species, twelve males of somewhat different size and a young female without eggs: according to him the female individuals would be much less frequent than the males, but Dr. Hoek observed quite the contrary and I received from him an ova-bearing female, found near Urk in August 1890, at a depth of 14 feet.

This species now ought to be referred to the genus *Heteropanope*, as it was characterized by me in my "Report on the Crustacea of the Mergui Archipelago" (Jour-

Notes from the Leyden Museum, Vol. XIV.

nal of the Linnean Society of London, Vol. XXII, 1888, p. 52), and it appears most closely allied to *Heteropanope indica* de Man, that inhabits the Mergui Archipelago.

As regards indeed the general form of the cephalothorax, of the chelipedes and of the ambulatory legs, both species no doubt present a striking resemblance with one another and it is only by a close examination that the slight differences can be observed. As in the Mergui species, the cephalothorax is broadest at the third antero-lateral teeth; the proportion of the width of the cephalothorax to the length is nearly quite the same in both species. The upper surface, rather depressed in *Heterop. indica*, appears to be slightly convex in the Dutch species and distinctly declivous towards the front and the lateral margins. The transverse groove, separating the cardiac region from the mesogastric area, is rather deep and the two grooves which border the latter anteriorly and converge towards the very slight frontal furrow, are also quite distinct, but the other interregional grooves are faintly marked. The posterior branchial regions are somewhat rugose and the anterior half of the upper surface is marked, like in *Heterop. indica*, with some transverse, minutely granulated, pubescent, elevated lines, five on each side, which, however, present a different arrangement in both species. The epigastric lobes, lying immediately behind the frontal margin, and each of which in the Mergui species bears a transverse line, appear smooth in *Heterop. tridentata*. In both species each protogastric lobe is marked with two transverse lines; in *Heterop. indica* these ridges are placed nearly in the same transverse line near one another, but in *Heterop. tridentata* they are placed behind one another, and the anterior is somewhat shorter than the posterior; in some individuals these two lines are divided into smaller ones. The mesogastric area presents on each side a transverse line, but in *Heterop. indica* this region is smooth. The fourth or last antero-lateral tooth is slightly

Notes from the Leyden Museum, Vol. XIV.

carinate above; this short crest, running obliquely backwards and being likewise pubescent, is the fourth of the five elevated lines that are seen on each half of the upper surface of the cephalothorax. The fifth, finally, is the longest and proceeds almost transversely; it occurs between the fourth line and the posterior border of each protogastric lobe. In *Heterop. indica* before this fifth line, moreover a much shorter one is found near the third antero-lateral tooth, but this shorter line is completely wanting in Maitland's species. The upper surface of the anterior half of the cephalothorax before and between the described transverse lines is quite smooth.

The front is a little less broad in this species in proportion to the width of the cephalothorax than in *Heterop. indica*, its breadth being not quite one third of the width of the carapace; it is nearly as prominent and presents the same form, but each lobe is somewhat less distinctly emarginate towards its external angle. Immediately behind the granulated margin of the front and parallel with it, a granulated crest occurs, likewise divided into two halves by a median triangular incision, so that the front may be described as bimarginate, which seems to be also the case in *Heterop. indica* according to my description. The orbits have quite the same form and the same fissures on their finely granulated margins as those of *Heterop. indica*, namely two on the outer half of the upper margin and one small triangular incision on the finely granulated inferior margin near the little prominent external orbital angles. The inner angle of the under margin projects, as in *Heterop. indica*, as a rather obtuse tooth a little beyond the inner angle of the upper margin.

The antero-lateral margins are armed with four prominent teeth, including the external orbital angles; these teeth present just the same form and the same proportions as those of *Heterop. indica*, so that the description of the latter is wholly applicable to Maitland's species. The inflected sides of the cephalothorax are finely granular and

hairy, but are not provided with a tubercular eminence or tooth as in some other species of this genus. The short and quadrate basal joint of the external antennae reaches to the front. The epistome is smooth and the endostome distinctly ridged on each side. The abdomen of the male seems to be five-jointed, as the third, fourth and fifth segments are probably coalescent, but Hoek figures it (l. c.) as seven-jointed; the penultimate segment is distinctly broader than long. The sternum of the male is somewhat granulated on the anterior segment, near the abdomen, near the maxillipedes and near the basal joint of the chelipedes.

The chelipedes of the male are very unequal and in all the specimens before me the right is the larger. The upper margin seems to be unarmed at the distal end, but presents a strong, acute, somewhat curved tooth in the Mergui species. The under margin is obtusely rounded and the anterior somewhat hairy. The wrist is armed at the internal angle with a scarcely acute tooth and appears somewhat uneven and granular on the upper surface, especially that of the smaller chelipede. The hand of the larger chelipede (fig. 1^b) is exactly as long or scarcely shorter than the breadth of the cephalothorax. The palm is about once and a half as long as the fingers, measured horizontally and but little longer than high. As in *Heterop. indica*, the outer surface of the palm is rather convex and quite smooth; the upper margin, which in the Mergui species was described by me as obtuse, appears remarkably flattened in *Heterop. tridentata* and is separated from the outer surface of the palm by a more or less distinct longitudinal crest, running parallel with the inner border of the upper margin. In some individuals this flattened upper margin, sometimes even slightly concave, appears minutely granular, especially along its borders, when seen under a lens. The convex inner surface of the palm is equally smooth. The fingers, which have pointed tips and leave, when closed, a small hiatus between them, are

Notes from the Leyden Museum, Vol. XIV.

distinctly compressed laterally, a character of which I made no mention in my description of *Heterop. indica*. The arcuate mobile finger appears slightly concave in a longitudinal direction on its outer as well as on its inner surface and is smooth everywhere except at the base of the upper margin that appears finely granular when seen under a lens; the inner margin is armed with seven or eight small teeth of somewhat unequal size. The index or immobile finger is also faintly longitudinally furrowed on its outer surface and its inner margin is also provided with several (seven or eight) teeth of unequal size.

The fingers of the smaller hand of the male (fig. 1c) are comparatively a little longer than those of the larger chela, being but little shorter than the palm, and they leave no hiatus between them when closed. For the rest this hand presents quite the same characters as the other, the outer surface of the palm being perfectly smooth and glabrous, the upper margin being flattened or even slightly concave longitudinally, separated from the outer surface by a longitudinal, more or less distinct crest or edge and appearing more or less distinctly granular when examined under a lens. The fingers are laterally compressed and faintly grooved longitudinally on their outer surface; the mobile finger is finely granulated nearly along its whole upper margin and armed with six or seven small teeth; the lower finger, finally, has ten or twelve small teeth. The smaller hand of *Heterop. indica*, however, was described by me as being covered with distinct granules and with sparsely distributed hairs on the outer surface of the palm.

In the single female specimen that I have before me, an ova-bearing individual, the cephalothorax is but $11\frac{1}{2}$ mm. broad. As in the males the right chelipede (fig. 1d) is a little larger than the left. The chelae resemble the smaller hand of the male, but they are somewhat granular. Both hands have the upper margin of the palm distinctly flattened and separated from the outer surface by a gra-

Notes from the Leyden Museum, Vol. XIV.

nulated edge. The outer surface of the palm is somewhat granular near the articulation with the wrist, especially that of the smaller hand, and in both hands the furrowed fingers are somewhat granulated at their base.

The ambulatory legs resemble those of the Mergui species, but the terminal joints are slightly longer than the propodites.

I give the measurements of four male specimens:

	millimetres.			
	1.	2.	3.	4.
Length of the cephalothorax	14 $\frac{1}{4}$	14 $\frac{1}{4}$	13 $\frac{1}{4}$	11 $\frac{1}{4}$
Breadth of the cephalothorax (distance between the third antero-lateral teeth)	19 $\frac{1}{4}$	19 $\frac{1}{4}$	18 $\frac{1}{4}$	15 $\frac{1}{4}$
Distance between the internal orbital angles . . .	6	5 $\frac{1}{4}$	5 $\frac{1}{4}$	4 $\frac{1}{4}$
Length of the larger hand (fingers included). . .	16	19	15 $\frac{1}{4}$	15
Length of the palm	9 $\frac{1}{4}$	11 $\frac{1}{4}$	10	9
Height of the palm near the articulation with the fingers.	8	9 $\frac{1}{4}$	8	7 $\frac{1}{4}$

Heterop. Vauquelini Aud., of which a male specimen from the Red Sea lies before me, may be distinguished from *Heterop. tridentata* by the following characters: the front is somewhat broader, the distance between the internal orbital angles being somewhat broader than a third of the width of the cephalothorax; it is rather deeply emarginate on each side of the small triangular median incision, and, consequently, the front consists of two prominent, broad and rounded internal and of two external lobes, the latter being much smaller, dentiform and projecting much less forward i. e. downward. The protogastric and mesogastric regions are not marked with transverse ridges, as in *Heterop. tridentata*, but they are smooth, and no granulated crests are seen in this species on the frontal lobes, immediately behind their anterior margin, so that in *Heterop. Vauquelini* the front does not appear bimar-ginate. The upper margin of the arm of the larger chelipede of the male terminates into an acute tooth. The upper margin of the palm of the larger chela of the male is simply obtuse, not flattened as in the dutch species;

Notes from the Leyden Museum, Vol. XIV.

the fingers of the larger hand, finally, are not compressed laterally and their outer surface appears rather convex.

A different species also is *Heteropanope serratifrons* Kinahan which is identical with *Pilumnopus crassimanus* A. M. E. In this species, which inhabits the Pacific Ocean, the front is also a little broader than that of *Heteropanope tridentata*, and the second antero-lateral lobe of the cephalothorax is considerably longer than the first, whereas in the dutch species the first lobe appears still a little longer than the second. The upper margin of the arm of the larger chelipede of the male ends into an acute tooth, as in *Heterop. Vauquelini*, and the larger hand, finally, presents a somewhat different form (confer de Man, in: Notes from the Leyden Museum, Vol. XII, p. 56; pl. 3, fig. 2).

6. *Geotelphusa picta* v. Mart.

(Fig. 2).

Telphusa picta, von Martens, Ueber einige neue Crustaceen; in: Monatsberichte der kön. preuss. Akad. d. Wissenschaften zu Berlin, Nov. 1868, S. 611.

I refer to this species, which was first observed in the lake Bato, Isle of Luzon, Philippines, some specimens in the Leyden Museum, viz. two female individuals collected by Kuhl and van Hasselt in the island of Java, and seven specimens (3 ♂, 4 ♀) of somewhat smaller size, of which the locality is unknown. I at first believed them to represent a new species for which I proposed the name of *modesta*, but I sent a male specimen to Dr. Hilgendorf in Berlin, who thereupon informed me that in his opinion this species most probably ought to be referred to *Telphusa picta* v. Mart.¹⁾

1) As the quoted description given by von Martens is not clear enough, Dr. Hilgendorf wrote me the following about it: „Länge des Cephalothorax nur 24 (statt 25) mm., Breite 32 mm. (statt 33); der Seitenrand ist vor und hinter

I sent to Dr. Hilgendorf a male, the cephalothorax of which is 37 mm. broad; the abdomen and the smaller hand of this specimen have been figured (fig. 2^c and 2^e); moreover I sent him a detached larger hand of a male, which has been figured in fig. 2^d.

The cephalothorax (fig. 2), closely resembling that of *Telphusa Goudoti* A. M. E. from Madagascar, is rather much enlarged, the proportion of its breadth to the length (the abdomen excluded) being in the adult female from Java as 43:30, so that it is almost once and a half as broad as long. The upper surface of the rather thick cephalothorax is strongly convex longitudinally and also somewhat declivous towards the lateral margins. The cervical suture is represented by the usual H-like impression on the posterior half of the upper surface, that separates the gastric from the cardiac region and by two oblique longitudinal impressions on the anterior part, one on each side, separating the gastric from the anterior branchial regions; the last-named grooves are not continuous with and therefore do not pass into the median H-like impression, so that the cervical suture may be said to be interrupted on each side of the posterior half of the gastric region. At a short distance from and just above the insertion of the last pair of legs, a transverse, slightly arcuate impression is found on each side of the posterior part of the upper surface; these transverse grooves separate the intestinal from the posterior branchial regions. The interregional grooves are often less distinctly indicated and shallower in younger individuals. The branchial regions are much inflated,

dem Zahne glatt (nur der Zahnkerb selbst und die Runzeln stören die Linie), von Martens sagt: „sehr fein gekerbt“ (soll vielleicht der Zahnkerb sein). Drittletztes Abdominalsegment des Männchens ist kaum länger als breit (an der schmalsten Stelle 3 mm. breit, hinten und vorn $3\frac{1}{4}$; nirgends länger als $3\frac{1}{4}$). Die Scheeren sind bei ♂ und ♀ recht ungleich (Höhe ♀ 8:11 $\frac{1}{4}$, ♂ 6:9 $\frac{3}{4}$); klaffen beim (kleineren) Männchen schon. Am Carpus ist der hintere (nicht vordere) Zahn kleiner, also wie gewöhnlich bei *Telphusa*.”

Notes from the Leyden Museum, Vol. XIV.

not only the anterior, but also the posterior, the latter being also convex. The postfrontal crest is as little developed as in *Telphusa Goudoti* and only represented by two slight and low elevations, situated behind the front and separated from one another, as usually, by the median frontal furrow; they are often slightly erose.

The front is very narrow, its anterior margin measuring in adult individuals only a fifth of the greatest width of the cephalothorax, in younger individuals it measures a fourth of it. As the cephalothorax is very convex from behind towards the front, this latter appears likewise much inclined. The anterior margin of the front appears slightly emarginate in the middle, when the cephalothorax is seen from above, but, in fact, the median part of the anterior margin is directed downwards and backwards, and united with the epistome. The anterior margin of the front forms with the upper margin of the orbits very obtuse, rounded angles (fig. 2^a). The orbits are nearly circular, as they are very little broader than high; the anterior margin of the front is about once and a half as broad as the breadth of the orbits. The anterior frontal margin and the margins of the orbits, the upper as well as the lower, are perfectly smooth. The external angle of the orbits is obtuse, not at all prominent, and therefore not tooth-like; there is no hiatus or emargination between the external angle and the lower margin of the orbits, the lower margin passing continually, without any interruption, into the upper one at the external angle. The epibranchial tooth is small, obtuse and situated as far distant from the external orbital angle as in *Telphusa Goudoti*. The antero-lateral margins are slightly serrate and smooth, never crenulate; the postero-lateral, which are not concave, are covered with many oblique wrinkles passing forwards and downwards on to the inflected portion of the carapace. The upper surface of the cephalo-

thorax is perfectly smooth and has nowhere a trace of granulation; it is however minutely punctate, the punctulation of the intestinal region being often more crowded than that of the rest of the upper surface. The pterygostomian regions are a little rugose.

Dr. Hilgendorf believed that the posterior margin of the cephalothorax was somewhat less broad in our specimens than in *Telphusa picta*. He wrote me on this character the following: »Als Unterschied Ihres Exemplares gegenüber *picta* ist, ausser der Farbe (ich habe aber andere Exemplare von Luzon, die auch ungefleckt sind), die Schmalheit des Hinterrandes vom Cephalothorax bemerkenswerth; dieser (oder die gleichgrosse Breite des anliegenden Abdominalsegmentes) ist bei Ihrem Exemplare $2\frac{1}{3}$ — $2\frac{1}{2}$ Mal in der Breite des Cephalothorax enthalten, bei *picta* (gros- ses ♀) kaum zweimal, bei dem Männchen allerdings $2\frac{1}{5}$ Mal. Wahrscheinlich ändert sich dies mit dem Alter, wie es bei der Verlängerung der Scheerenfinger sicher zu sein scheint. Danach würden die bei Ihrem Exemplare sehr langen Finger (fig. 2^d) (Index fast genau = Unterrand der Hand, bei unserem, nur 22 mm. breiten, Männchen 8 : 12 mm.) noch keinen specifischen Unterschied bedingen.»

The impressed line on the ischium-joint of the outer foot-jaws (fig. 2^b) runs not far from the internal margin of the joint, and not in the middle of it; this joint is coarsely punctate, but the merus-joint is almost smooth. The abdomen of the male (fig. 2^c) resembles in general form that of *Paratelphusa spinigera* Wood-Mas.; the penultimate joint is nearly as long as broad and its lateral margins are slightly concave, immediately behind the middle; the terminal joint is scarcely longer than broad at its base and rounded at the tip. The outer surface of sternum and abdomen is distinctly punctate.

The chelipedes of the male are very unequal. The arms do not project as much beyond the lateral margins of the cephalothorax as in *Telphusa Goudoti*; their upper and their anterior margins are granular and a few trans-

Notes from the Leyden Museum, Vol. XIV.

verse, minutely granulated lines are observed on their outer surface. The upper surface of the wrist is a little rugose towards the external and internal margins; the internal margin is armed with a strong acute tooth, below which there is a much smaller one. The larger hand (fig. 2^d) closely resembles that of *Telphusa obesa* A. M. E., a species which inhabits Zanzibar and the opposite coast of Africa (Nouv. Archives du Muséum, tome IV, pl. 20, fig. 3). The outer surface of the palm appears minutely punctate, but for the rest quite smooth and shining to the naked eye; under a strong magnifying-glass an extremely fine and minute granulation is however observed, with which the palm is covered. The palm is almost as long as high at the base of the fingers; its upper margin is rounded and the under margin also rounded and convex. The fingers, that, measured horizontally, appear nearly once and a half as long as the palm, are widely gaping, almost as much as those of the larger hand of *Telphusa obesa*. Like the palm, they are minutely punctate, and being smooth to the naked eye, they in fact seem to be minutely granular, when examined under a strong magnifying-glass. The index, forming a concave line with the lower margin of the palm, presents a strong tooth at a short distance from its base, preceded by three very small ones; a smaller tooth stands on the middle of the finger and between this tooth and the tip still nine or ten very small teeth are observed. The strongly arcuate mobile finger is armed with a strong tooth a little before the middle, standing somewhat beyond the principal tooth of the index; a much smaller tooth is seen near the base, and between the tip of the finger and the strong tooth in the middle, still eleven or twelve very small teeth are observed.

The fingers of the smaller hand (fig. 2^e), when closed, meet together along their whole length; they are also nearly once and a half as long as the palm. Both fingers are feebly toothed; on the lower about twenty small teeth

Notes from the Leyden Museum, Vol. XIV.

are found, two or three of which near the base are slightly larger than the others; the teeth of the upper finger are somewhat smaller than those of the index.

The hands of the female (fig. 2^f) are likewise a little unequal and resemble the smaller hand of the male, their fingers meeting together along their whole length. In the larger hand the palm is almost as long as the fingers, but those of the smaller hand (fig. 2^f) are distinctly longer than the palm; as regards their denticulation, the fingers nearly agree with those of the smaller hand of the male.

The ambulatory legs are similar to those of *Telphusa Goudoti*. Dr. Hilgendorf wrote me the following about the meropodite of the last pair: »Der Schenkel des letzten Fusspaares ist bei Ihrem Exemplare länger (= Stirn + 1 Orbita), bei unserem kürzer (kaum Stirn + $\frac{1}{2}$ Orbita), aber auch dieser Körpertheil könnte bei älteren Exemplaren mehr gestreckt sein.»

Measurements of three specimens, the larger female being that of Java:

	millimetres.		
	♂ ¹⁾	♀	♀
Length of the cephalothorax (abdomen excluded)	26 $\frac{1}{2}$	30	19 $\frac{2}{3}$
Distance between the external orbital angles	21 $\frac{1}{4}$	23 $\frac{1}{2}$	17
Greatest breadth of the cephalothorax.	38 $\frac{1}{4}$	43 $\frac{1}{4}$	28 $\frac{1}{2}$
Breadth of the anterior margin of the front.	8 $\frac{2}{3}$	9 $\frac{1}{3}$	7
Distance between the epibranchial tooth and the external orbital angle . .	3 $\frac{1}{3}$	4	2 $\frac{1}{2}$
Length of the larger hand	35	29	
Height » » » »	17	11 $\frac{3}{4}$	

As I already observed, *Telphusa Goudoti* M. E. is most

1) The male measured had lost its larger hand; I give the dimensions of a larger hand found free in the bottle.

closely allied ¹⁾. This species, however, which I examined in Paris, may be distinguished from *Telphusa picta* by the following characters. In *Telphusa Goudoti* the lower margin of the orbits is crenulate and separated from the external orbital angle by a hiatus or emargination. The orbits are less circular and comparatively a little broader.

The front is also a little broader. The impressed line on the ischium-joint of the external maxillipedes runs closer to the middle of the joint. The antero-lateral margins of the cephalothorax are a little longer and more prominent, the postero-lateral are slightly concave. The abdomen of the male has a somewhat different form. The larger hand of the male, finally, is also different, the fingers being much less gaping.

I add the measurements of two type-specimens of *Telphusa Goudoti*, preserved in the Paris Museum: millimetres.

	♂	♂
Length of the cephalothorax.	32 $\frac{1}{2}$	29 $\frac{1}{4}$
Distance between the external orbital angles.	30 $\frac{1}{2}$	27 $\frac{1}{2}$
Greatest width of the cephalothorax	46	41 $\frac{1}{2}$
Breadth of the front	10	9

Geotelphusa transversa v. Mart., identical with *Geotelphusa crassa* A. M. E., differs, according to a communication by Dr. Hilgendorf, by the following characters: the branchial regions are much more convex in *Geot. picta*, which is distinctly observed in a lateral view of the cephalothorax by the curvation of the antero-lateral margins. The median lobe of the epistome has a more triangular and not semicircular form. In the male the fingers are gaping, which is not the case in *Telphusa transversa*. The penultimate segment of the male abdomen is almost exactly quadrate. The impressed points on the cephalothorax are less deep and more distant from one another

1) *Telphusa Cumingii* Miers (Report on the Zoolog. Collections made in the indopacific Ocean during the Voyage of H. M. S. „Alert“, 1884, p. 236) from the Philippines, is quite imperfectly characterized, so that it is impossible to recognize this species, which may be allied to *Geotelphusa picta*.

than those of *transversa*, and the median frontal furrow is more distinct.

Telphusa angustifrons A. M. E., inhabiting Cape York together with *Telphusa transversa*, is also closely allied. In *Telphusa angustifrons*, indeed, there is also no hiatus or emargination between the lower margin of the orbits and their external angle, and the impressed line on the ischium-joint of the outer foot-jaws is situated as close to the internal margin of the joint as in *Geotelphusa picta*, but *Telphusa angustifrons* may, at first sight, be recognized by its less enlarged cephalothorax. The measurements of a type-specimen of *Telphusa angustifrons* in the Paris Museum are the following: ♀

Length of the cephalothorax	16 $\frac{1}{2}$ mm.
Distance between the external orbital angles	13 $\frac{2}{3}$ »
Greatest width of the cephalothorax	20 $\frac{1}{2}$ »
Breadth of the front	4 $\frac{1}{2}$ »

7. *Geotelphusa transversa* v. Mart.

Telphusa transversa, v. Martens, Ueber einige neue Crustaceen, in: Monatsbericht der kön. preuss. Akad. d. Wissenschaften zu Berlin, Nov. 1868, S. 609.

Telphusa crassa, A. Milne Edwards, Nouvelles Archives du Muséum, T. V., p. 177, pl. IX, fig. 2¹).

I refer to this species two young specimens (♂, ♀) collected on the Fidji Islands and purchased from the Museum Godeffroy.

One of these specimens I sent to Dr. Hilgendorf, who kindly informed me that it agrees quite well with the type-specimen of *Telph. transversa*, but that the chelipedes

1) If these two species are really identical, the name given by von Martens should have the priority. For, though Milne Edwards' paper was presented to the "Société entomologique de France" in June 1868, the name *crassa* appears no sooner than in the Zoological Record for 1869, whereas *Telphusa transversa* is already recorded in that for 1868, and von Martens himself was at that time the recorder.

are still of equal size and that the cephalothorax is not yet as much convex.

The cephalothorax of *Geotelphusa crassa*, the type-specimens of which I examined in Paris, is in adult individuals about once and a half as broad as long, but in the younger it appears comparatively longer. The upper surface is a little convex from behind forwards, somewhat more in the adult than in the young, though not in such a degree as in *Geot. picta* v. Mart., and also somewhat convex transversely. The upper surface is punctate, but for the rest quite smooth; the points are somewhat coarser on the gastric region, finer and less numerous on the rest of the upper surface. The cervical suture, interrupted as in *Geot. picta* on each side of the posterior part of the gastric region, is rather shallow. The two slightly erose, postfrontal elevations, situated behind the front and separated from one another, as usually, by the median frontal furrow, are scarcely distinct; other traces of the postfrontal crest are completely wanting. The front, as far as it is visible when the carapace is looked at from above, is bordered anteriorly by a straight or a little concave, slightly cristate margin, which passes with very obtuse and rounded angles into the upper margin of the orbits; that slightly cristate margin forms the anterior margin of the front. The anterior part of the front, however, lying before the said margin, is deflexed downwards and backwards, and united with the epistome, as in the preceding species. The orbits are transverse and a little broader than long, the proportion of their breadth to their height being as $3:2\frac{1}{3}$. The anterior frontal margin and the upper margin of the orbits are perfectly smooth, but the arcuate lower margin, which passes directly into the upper without a hiatus or interruption at the external angle, appears very finely crenulate. The external angle of the orbits is little prominent, not tooth-like. The lateral margins of the cephalothorax are arcuate. The antero-lateral ones, being long and extending until a little before the

Notes from the Leyden Museum, Vol. XIV.

transverse gastrocadiac suture, are cristate and minutely denticulate; they present at some distance from the external angles of the orbits a very small epibranchial tooth, which is however often only indicated by a triangular and small incision of the margin. The antero-lateral regions of the upper surface of the carapace are perfectly smooth, presenting no wrinkles at all. The postero-lateral margins, straight or a little convex and scarcely longer than the antero-lateral ones, are covered with some rather long, oblique wrinkles, which, as ordinarily, pass forwards and downwards on the inflected portions of the carapace, and the pterygostomian regions are also wrinkled.

The impressed line on the punctate ischium-joint of the outer foot-jaws lies not far from the internal margin and not in the middle of the joint. Sternum and abdomen are very finely, and not closely punctate. The lateral margins of the abdomen of the male are a little concave. The penultimate joint is broader than long, and in the middle of its length it is just once and a half as broad as long; its lateral margins are very slightly concave. The terminal joint is somewhat shorter than the breadth of its posterior margin and nearly as long as the penultimate joint.

According to Milne Edwards' description, the anterior legs of the male should be unequal and strong; they are also unequal in the type-specimen of *transversa*. Unfortunately I have not noticed how they are in the adult male which I examined in Paris, but on the quoted figure in the »Nouvelles Archives" they appear rather feeble and equal. I think that it represents the female or that the figure is not correct. In our young male from Fidji they are still equal and feeble. The fingers, which are somewhat longer than the palm, meet almost completely together, when closed, and are in our specimen longitudinally grooved: two grooves are observed on the outer side of the mobile finger, one or two also on the index. The carpus, the upper surface of which is somewhat gra-

nular, is armed with a strong tooth at the inner angle, below which there is still a smaller one.

The ambulatory legs are rather short.

I give the measurements of two type-specimens of *Geot. crassa* A. M. E. from the Paris Museum, collected at Cape York, and of our two younger individuals from the Fidji Islands:

	millimetres.			
	1.	2.	3.	4.
	♂ ¹⁾	♀	♂	♀
Length of the cephalothorax (abdomen excluded)	20 ² / ₃	16 ¹ / ₄	13	13
Distance between the external orbital angles	17 ² / ₃	14 ¹ / ₄	11	11 ¹ / ₄
Greatest breadth of the cephalothorax	30 ¹ / ₃	22 ¹ / ₂	16 ² / ₃	17
Breadth of the anterior frontal margin	6	4 ¹ / ₂	4 ¹ / ₄	4 ¹ / ₃

The differences between *Geot. transversa* and *Geot. picta* have already been enumerated by me on page 240. Finally may be added the following remarks on the original description of *Geot. transversa* by von Martens made by Dr. Hilgendorf after an examination of the type-specimen and which he afterwards communicated to me. The cephalothorax of the male is only 25 mm. long (not 26 mm.) and 31¹/₂ mm. broad (instead of 32). Besides the punctulation of the carapace, Hilgendorf observes a very minute, somewhat irregular granulation. The frontal margin presents in the male specimen no trace of emargination. The external orbital angle may hardly be said to be dentiform. The lateral margins of the penultimate segment of the abdomen of the male are not quite parallel, though they are much less convergent than those of the other segments.

1) The cephalothorax of the male type from Cape York in the Paris Museum Collection is broken, so that the given measurements of the length and of the greatest width are probably not quite exact.

The larger hand of the male is $20\frac{1}{2}$ mm. long above, but 22 mm. below, the chela of the female 15 mm. above. Behind the third maxillipedes and close to them, the sternum presents a transverse groove.

Dr. Hilgendorf finally adds that in a younger male specimen from Port Mackay, only 20 mm. broad, the two anterior legs are still nearly equal and that the transverse groove on the sternum is still wanting.

8. *Geotelphusa loxophthalma*, n. sp.¹⁾

(Fig. 3).

One single male specimen, collected by Schwaner at the island of Borneo and presented to the Leyden Museum in 1846.

This interesting new species, which has no postfrontal ridge and which therefore ought to be referred to the subgenus *Geotelphusa*, may at first sight be recognized by the oblique direction of its small orbits, by the narrow front and by the enlarged carapace.

The cephalothorax is much enlarged and exactly once and a half as broad as long. It is somewhat convex from behind forwards, especially anteriorly, whereas it is more flattened posteriorly. As in *Geot. picta*, the cervical suture is interrupted on each side of the posterior part of the gastric region; the median H-like impression is rather shallow, but the oblique anterior furrows, separating the gastric from the anterior branchial regions, are deeper. A postfrontal crest may be considered to want in this species, for it is only represented by the two very low, somewhat erose elevations, which are situated behind the front and separated, as usually, from one another by the median frontal furrow. The front is very narrow and the orbits are small, so that the distance between the external orbital angles

1) λοξός, oblique.

is not quite half as long as the greatest width of the cephalothorax. The anterior margin of the front, measuring scarcely a fifth of the greatest breadth of the cephalothorax, forms very oblique, obtuse and rounded angles with the upper margin of the orbits; the anterior margin is, as in *Geot. picta*, deflexed downwards and backwards in the middle, uniting itself with the epistome.

Highly characteristic of this species are the orbits. In *Geot. picta*, like in most other species of *Telphusa*, the imaginary line uniting the external orbital angles with one another coincides with the anterior margin of the front, so that the orbits show a transverse direction, their external angle being placed at the same level as the anterior margin of the front. In *Geot. loxophthalma*, however, the orbits appear to be directed (fig. 3^a) very obliquely and their external angles to be situated below the anterior frontal margin, when the carapace is looked at from the front, so that the imaginary line which unites the external orbital angles, does not coincide with, but lies below the anterior margin of the front. The orbits are small and longer than high, the proportion of their length to their height being as 5:3. The upper orbital margin is a little sinuous, the lower arcuate, and both pass directly into one another, without any interruption or hiatus, at the external angle, that is little prominent and not tooth-like. When the carapace is looked at from above, the external angles of the orbits appear however to project a little more forwards than the anterior margin of the front, which is not the case in *Geot. picta*. The anterior margin of the front and the margins of the orbits are quite smooth, not crenulate. At some distance from the external orbital angle, the antero-lateral margin of the cephalothorax presents a very small emargination, but an epi-branchial tooth may not be said to exist. The strongly arcuate, antero-lateral margins of the cephalothorax are distinctly indicated, though they are not cristate;

they are a little erose, but not granulate or denticulate at all. The postero-lateral margins are slightly concave. The upper surface of the carapace is finely punctulate, somewhat coarser on the front and on the cardiac and intestinal regions. Near the postero-lateral margins many oblique wrinkles are observed, as usually, that pass forwards and downwards to the inflected portions of the cephalothorax; the latter are therefore covered with numerous oblique wrinkles and the pterygostomian regions are also a little rugose. The oblique wrinkles pass also in this species from the postero- to the antero-lateral margins (fig. 3) and, becoming gradually smaller and shorter, may be seen until near the external orbital angles; small punctulations are found in front of all these wrinkles, so that the upper surface of the cephalothorax appears also closer and more coarsely punctulate near the antero-lateral margins than on the gastric region.

The impressed line on the punctulate ischium-joint of the outer foot-jaws (fig. 3^b) runs close to the internal margin of the joint and not in the middle of it.

The male abdomen (fig. 3^c) somewhat resembles that of *Geot. picta*, but the penultimate joint is distinctly a little longer than broad at its anterior or posterior margin and it is somewhat constricted in the middle, so that the lateral margins are concave; the terminal joint is a little longer than the penultimate, once and a half as long as its posterior margin, the lateral margins are slightly concave and the tip is rounded. Sternum and abdomen are rather coarsely punctate.

The anterior legs of the male are unequal in form and size, the larger being found on the right side. The arms do not project as far beyond the lateral margins of the cephalothorax as those of *Geot. Goudoti*. The upper surface of the wrist, armed at its internal angle with a short, though acute tooth, is slightly rugose and erose. The larger hand (fig. 3^d) is scarcely twice as long as high and the fingers are but little longer than the palm; the

Notes from the Leyden Museum, Vol. XIV.

latter is almost as long as high. Its outer surface and rounded upper and lower margins are very slightly rugose and erose and these small rugosities are even visible to the naked eye, especially towards the upper and lower margins and towards the articulation with the palm. The compressed fingers, leaving a small interspace between them, when closed, present a few longitudinal rows of small puncta on their outer surface and the latter appears even minutely granulate when examined under a strong magnifying-glass. The index presents fifteen or sixteen small teeth, of which two on the middle are a little larger, and similar teeth are observed on the mobile finger. The fingers of the smaller hand (fig. 3^b), meeting together when closed, are about once and a half as long as the palm; as regards its denticulation and the structure of the outer surface, the smaller hand resembles the other.

The ambulatory legs are slender, especially the meropodites.

Measurements:

	♂
Length of the cephalothorax (abdomen excluded)	23 mm.
Distance between the external orbital angles .	16 $\frac{2}{3}$ »
Greatest breadth of the cephalothorax. . . .	35 »
Breadth of the anterior frontal margin . . .	7 »

9. *Sesarma Eydouxi* M. E.

Sesarma Eydouxi, Milne Edwards, in: Annales Sciences Naturelles, 3e Série, T. XX, 1853, p. 184.

I examined in Paris the type-specimen of this species, a male from Touranne, which presents the following measurements:

Distance between the external orbital angles .	31 $\frac{1}{4}$ mm.
Length of the cephalothorax.	26 $\frac{1}{4}$ »
Breadth of the upper margin of the front . .	18 $\frac{3}{4}$ »
Breadth of the posterior margin of the cephalothorax.	13 $\frac{1}{2}$ »

Notes from the Leyden Museum, Vol. XIV.

Length of the meropodites of the last pair of
 legs $16\frac{1}{2}$ mm.
 Breadth of the meropodites of the last pair of
 legs 9 »

The lateral margins of the cephalothorax converge slightly backwards. The chelipedes are provided with a finely denticulate ridge on the upper margin of the palm, the outer surface of which is smooth. The meropodites of the ambulatory legs are much enlarged and the propodites are scarcely shorter than the dactylopodites.

10. *Sesarma recta* Randall.

(Fig. 4).

Sesarma recta, Randall, in: Journal of the Academy of Nat. Sciences of Philadelphia, Vol. VIII, Part 1, 1839, p. 123.

Seven specimens, three males and four females, two of which are provided with eggs, were collected in Surinam by Dr. H. ten Kate.

I refer them to *Ses. recta* Rand. — a species said to be found in Surinam — with some doubt however, because the literature on the other West-Indian Decapoda is only partly at my disposal.

This species belongs to that section of the genus, in which the lateral margins of the cephalothorax are entire, without an epibranchial tooth behind the external orbital angles and in which the hands of the male are not provided with pectinated ridges on the upper margin of the palm. It may at first sight be recognized by the singular enlargement of the mobile finger of the male at its base.

Sesarma recta presents a remarkable resemblance, as regards its general form and appearance, with *Ses. quadrata* Fabr. from which it differs at first sight by the absence of pectinated ridges on the hands of the male.

The cephalothorax has a quadrate form and appears but

Notes from the Leyden Museum, Vol. XIV.

slightly broader than long. The distance between the external orbital angles is however distinctly longer than the length of the cephalothorax, but, as the lateral margins are slightly convergent backwards, the cephalothorax appears nevertheless posteriorly almost as broad as it is long. The proportion of the distance between the external orbital angles and the length of the carapace of the largest individual (♂) is as 6:5, in *Ses. quadrata* Fabr. however as 4:3, so that *Ses. recta* appears still very slightly longer in proportion to the distance between the external orbital angles than the other species. The upper surface is slightly convex longitudinally and also somewhat declivous towards the lateral and posterior margins. The usual interregional grooves are very well indicated and rather deep in the adult male. The upper surface is marked anteriorly with numerous transverse rugosities and wrinkles that are pubescent for a part, whereas the cardiac and intestinal regions are rather coarsely punctate; the declivous lateral parts of the branchial regions, finally, are provided with the usual oblique and piliferous elevated lines.

The front is slightly broader in proportion to the distance between the external orbital angles than that of *Ses. quadrata* and vertically deflexed. The upper margin is divided into four obtuse lobes by the three usual grooves which are rather deep; the two internal lobes are slightly broader than the external; they are not prominent, so that the inferior margin of the front is entirely visible when the cephalothorax is looked at from above. This somewhat prominent inferior margin presents a rather broad, though shallow emargination in the middle, on each side of which it is very slightly sinuous; the front is somewhat granular between its two margins.

The lateral margins of the cephalothorax, which are not parallel but somewhat convergent backwards, are a little concave posteriorly; they are entire,

though I must remark that a slight trace of an epibranchial tooth is seen in the larger individuals a little behind the acute external orbital angles. The epistome is somewhat granular. The second joint of the outer foot-jaws is longitudinally furrowed in the middle and the third joint is oval. The lobe at the infero-internal angle of the orbits is small. The abdomen of the male (fig. 4^a) resembles that of *Ses. intermedia* de Haan (Fauna japon. Pl. XVI, fig. 5); the terminal joint is short, being a little broader at its base than it is long; the penultimate segment is not quite three times as broad at its posterior margin as it is long and has convex rounded lateral margins; the following segments gradually decrease in length. The terminal segment of the abdomen of the female is profoundly pushed into the preceding. Sternum and abdomen are a little punctate, but for the rest quite smooth.

The anterior legs of the largest male individual are little more than once and a half as long as the cephalothorax. The anterior margin of the arm, the outer surface of which is transversely rugose, is granulated, but for the rest unarmed; the upper margin is also unarmed, but the granulated infero-external margin is notched before its distal end, so that it terminates into a tooth before that incision. The wrist, granular and rugose above, is unarmed at its internal angle. The hands (fig. 4^b, 4^c) are stout, the fingers once and a half as long as the palm. The convex outer surface of the palm is finely granulated, the inner surface is also slightly granular, but bears no transverse crest or ridge of prominent granules; the upper surface of the palm is granular like the outer surface, but presents no pectinated ridges or crests. Highly characteristic are the fingers of the adult male. The mobile finger is namely extraordinarily enlarged along its proximal half, rather rapidly tapering about the middle towards the tip; the upper surface of the enlarged proximal part

Notes from the Leyden Museum. Vol. XIV.

is somewhat flattened and everywhere granulated, and the granulation continues till near the tip of the finger. The inner margin, which is somewhat hairy on the dilated proximal part, is armed with a small tooth a little beyond the middle, with a second somewhat smaller one immediately before the tip and with two or three very small ones between the two larger.

The lower finger has not the ordinary conical shape as in most other species of the genus, but is very high (broad), broader than the mobile finger. Its outer surface is smooth, but the under margin and the inner surface are somewhat granular; this finger is slightly compressed laterally. Its inner margin is armed in the middle with a conical tooth, which is scarcely greater than the opposite largest tooth of the mobile finger, with a smaller conical tooth immediately before the tip and with three still smaller ones between them, of which the middle is a little larger than the two others.

In young males, the cephalothorax of which is only 10 mm. long, the upper finger appears still hardly dilated and the index presents still the usual conical form. The interesting characters of the fingers of the adult male are also wanting in the female and the upper finger appears only a little granular at its base.

The ambulatory legs resemble those of *Ses. quadrata* Fabr. The meropodites are somewhat granular or transversely rugose on their outer surface, the upper margin of which ends into a sharp tooth while the under margin is entire, as usual. They are considerably enlarged, so that e. g. those of the antepenultimate pair are half as broad as long. The two following joints are also stout and by no means slender, so that e. g. the propodites of the antepenultimate pair are a little more than twice as long as broad. The dactylopodites of all the legs are a little shorter than the propodites. The three last joints are somewhat hairy along their margins.

Notes from the Leyden Museum, Vol. XIV.

Randall's description agrees very well with the foregoing, I must, however, observe that he describes the anterior frontal margin as "profoundly excavated", the anterior legs of the male as being "at least twice the length of the body" and that his specimen was $1\frac{3}{10}$ inches long, thus almost twice as large as our adult male. I suppose, however, that the two named differences are to be ascribed to the much smaller size of our specimens.

Measurements of the two largest individuals:

	millimetres.	
	♂	♀
Distance between the external orbital angles	$19\frac{1}{2}$	$17\frac{1}{4}$
Length of the cephalothorax	$16\frac{1}{4}$	$14\frac{3}{4}$
Breadth of the front	12	$10\frac{3}{4}$
Breadth of the posterior margin	$7\frac{3}{4}$	8.

The two ova-bearing females are of a smaller size than the adult male, the cephalothorax of the larger one is 12 mm. long, that of the other only 10 mm.

11. *Sesarma angustipes* Dana.

(Fig. 5).

Sesarma angustipes, Dana, Unit. States Explor. Exped. Crustacea, p. 353, Pl. XXII, fig. 7. — Stimpson, Annals of the Lyceum of Natural History of New York, Vol. VII, 1862, p. 66. — Sidney J. Smith, Notes on American Crustacea, in: Trans. Connecticut Acad. Vol. II, 1870, p. 159.

Sesarma Ricordi, Milne Edwards, in: Annales Sciences Naturelles, T. XX, 1853, p. 183.

Two female specimens from St. Domingo.

These two specimens doubtless belong to *Sesarma Ricordi* M. E., as I found by comparing them in Paris with the original type-specimen, a male from the Antilles. I describe them, however, under the name of *Ses. angustipes*, because I believe that Dana's species is identical with *Ses. Ricordi*, as was already supposed by Stimpson. Dana figu-

Notes from the Leyden Museum, Vol. XIV.

red a male. I must, however, remark that in his figure the ambulatory legs appear comparatively a little less slender than in our individuals, which is especially the case with the propodites and dactylopodites.

I now describe the larger female (fig. 5). The cephalothorax appears nearly quadrate; it is, however, a little broader than long and even the distance between the external orbital angles surpasses somewhat the length. Dana's male specimen, being of a somewhat larger size, presents the same proportions. The upper surface is slightly convex, it appears smooth to the naked eye, but is minutely punctate when seen under a lens. In the younger individual it bears some small tufts of hair anteriorly and on the branchial regions. The ordinary interregional furrows are well marked and the branchial regions are obliquely plicate as usual. The front is nearly perpendicular. The upper margin is divided by a tolerably deep median groove and slight lateral ones into four lobules, the two internal of which are a little broader than the external; the former are almost smooth, but the external appear finely granulate, when seen under a lens. The lateral margins of the front are somewhat divergent, so that the inferior margin, which is almost four times as broad as the height of the front, appears a little broader than the superior. The lower margin shows a slightly sinuous edge, with a small, shallow sinus in the middle and a very slight one on each side. The front is somewhat granulate.

The branchial regions are slightly swollen. The almost parallel lateral margins of the cephalothorax are entire and rather sharp; the posterior margin finally is a little less broad than the front and exactly half as broad as the distance between the external orbital angles. The terminal segment of the female abdomen is almost entirely pushed into the preceding.

The anterior margin of the arm of the chelipedes is unarmed, but minutely granulated, like the two other margins. The finely granulated wrist presents an acute,

Notes from the Leyden Museum, Vol. XIV.

though unarmed inner angle. The fingers are distinctly longer than the palm. Both fingers and the palm are smooth externally, but the palm is somewhat granulate on the upper border and the mobile finger likewise at the base.

The ambulatory legs are long and slender, so that e. g. those of the penultimate pair are twice as long as the cephalothorax is broad. The meropodites, armed with an acute tooth at the distal end of their upper border, are three times as long as broad and somewhat transversely rugose on their outer surface. The slender propodites are still a little longer than the dactylopodites, that are also slender, slightly longitudinally sulcate, provided with some small tufts of hair and slightly curved towards the acute points. The propodites present also some small tufts of hair, but for the rest the ambulatory legs are nearly glabrous.

The measurements of these two specimens and of the male type-specimen of *Ses. Ricordi* in the Paris Museum are the following:

	millimetres.		
	1	2	3
	♀	♀	♂
Distance between the external orb. angles	16 $\frac{3}{4}$	11 $\frac{1}{4}$	14 $\frac{2}{3}$
Greatest width of the cephalothorax. .	17 $\frac{3}{8}$	12 $\frac{1}{2}$	
Length of the cephalothorax	16 $\frac{1}{4}$	10	14 $\frac{1}{4}$
Breadth of the superior border of the front	9	6	7 $\frac{3}{4}$
Breadth of the inferior margin of the front	9 $\frac{1}{2}$	6 $\frac{1}{3}$	8 $\frac{1}{2}$
Length of the penultimate pair of legs	34	26	
Length of the meropodites of the penultimate pair of legs.	12	9 $\frac{1}{2}$	10 $\frac{1}{2}$
Breadth of the meropodites of the penultimate pair of legs.	3 $\frac{3}{4}$	3 $\frac{1}{4}$	3 $\frac{1}{3}$

Nº. 3 is the male type-specimen of *Ses. Ricordi* M. E. in the Paris Museum.

I moreover examined in Paris the single type-specimen of *Ses. Guerini* M. E., a female of which the locality is unknown and it appears to me highly probable that this species is identical with *Ses. Ricordi* = *angustipes* Dana.

Notes from the Leyden Museum, Vol. XIV.

This type-specimen of *Ses. Guerini* is of a somewhat larger size than that of *Ricordi*; the branchial regions are a little more inflated, but this difference may perhaps be ascribed to the larger size.

The measurements of the type-specimen of *Ses. Guerini* are the following:

	♀
Distance between the external orbital angles . .	20 $\frac{1}{4}$ mm.
Length of the cephalothorax	20 »
Breadth of the superior margin of the front . .	11 $\frac{1}{8}$ »
» » » inferior » » » » . .	11 $\frac{3}{4}$ »
Length of the meropodites of the last pair of legs .	10 $\frac{3}{4}$ »
Breadth » » » » » » » » .	4 »
Length » » » » penultimate » .	14 »
Breadth » » » » » » » » .	5 »

12. *Sesarma elongata* A. M. E.

Sesarma elongatum, A. Milne Edwards, in: Nouvelles Archives du Muséum, T. V, Bulletin p. 30. — de Man, Uebersicht der indo-pacifischen Arten der Gattung *Sesarma*, in: Zoolog. Jahrbücher von J. W. Spengel, Bd. II, 1887, S. 645.

As far as I am aware, *Sesarma elongata*, which inhabits the western-coast of Madagascar, is only known by the short description given by A. Milne Edwards in 1869, so that the following remarks may be of some interest. I examined in Paris the original specimen, a male, which presents the following measurements:

Distance between the external orbital angles . .	33 $\frac{1}{4}$ mm.
Length of the cephalothorax	34 $\frac{1}{2}$ »
Breadth of the front	19 »
Breadth of the posterior margin of the cephalothorax	12 $\frac{1}{4}$ »
Length of the meropodites of the last pair of legs	20 $\frac{1}{2}$ »
Breadth » » » » » » » »	11 $\frac{1}{2}$ »

Ses. elongata belongs to those species of the genus, in which the lateral margins of the cephalothorax are entire and in which the chelipedes of the male have no oblique pectinated ridges on the upper margin of the palm. It dif-

fers from the other species of this section of the genus by the following characters. The cephalothorax is slightly longer than broad and its upper surface, on which the interregional grooves are distinctly indicated, is much flattened. The lateral margins are nearly parallel, though slightly concave in the middle. The front, that is almost perpendicular, is a little broader than half the distance between the external orbital angles; its upper margin is divided by rather deep grooves into four lobes, of which the internal ones are a little broader than the external, and its inferior margin is widely and profoundly emarginate in the middle. The posterior margin of the cephalothorax is narrow.

The arm of the chelipedes has a denticulate tooth on its anterior margin and the wrist is unarmed, having no tooth at its inner angle. The outer surface of the hands is finely granulate, the inner surface presents a transverse row of little prominent granules. The palm is provided with a finely pectinated longitudinal crest as in *Ses. taeniolata*, and, as in this species, the mobile finger is marked on its upper margin with a longitudinal row of forty small transverse ridges.

The meropodites of the ambulatory legs are much enlarged, the propodites elongate and the dactylopodites considerably shorter than the propodites.

13. *Sesarma curaçaoensis*, n. sp.

(Fig. 6).

The Leyden Collection contains one male specimen, found by Mr. Neervoort van de Poll on the island of Curaçao. I describe it as a new species, with some doubt however, not only because this specimen may be a young one, not yet presenting the characters of the adult, but also because only a part of the literature on West-Indian Decapoda is at my disposal.

Ses. curaçaoensis, indeed, belongs to those species of the

Notes from the Leyden Museum, Vol. XIV.

genus, in which the lateral margins of the cephalothorax are armed with an epibranchial tooth behind the external orbital angle and in which the hands of the male are not provided with pectinated ridges on the upper margin of the palm, to a section which is represented in the indopacific region by a number of species, whereas only two species of that section are known to me as inhabiting the American seas, viz. *Sesarma crassipes* Cano (1889) from Pernambuco and *Ses. sulcata* Smith (1870) from the western-coast of Nicaragua.

As in the last-named species, the cephalothorax is much broader than long, its greatest width (at the epibranchial teeth) being in proportion to the length as 5:4. The upper surface is somewhat convex longitudinally, and, as usual, declivous on the branchial regions. The interregional grooves are almost wanting, for only those bordering posteriorly the mesogastric and cardiac regions are represented by shallow depressions. The declivous branchial regions are traversed by the ordinary sharp, pubescent elevated lines, but for the rest the upper surface of the cephalothorax is smooth and even shining, though it appears distinctly punctate, even to the naked eye. Rather large impressed points indeed are found on the gastric and cardiac regions, especially on the protogastric lobes, but the whole upper surface appears moreover very finely punctate when seen under a magnifying glass and then also a few very small tufts of hairs are observed, distributed over the whole upper surface. The front is a little broader than half the width of the cephalothorax and very obliquely deflexed; the four postfrontal lobes, the internal of which are somewhat broader than the external, are very little prominent, so that the front is entirely visible when the cephalothorax is looked at from above; they are moreover only separated from one another by very slight grooves, of which the mesial frontal furrow is a little more distinct, bifurcating itself, as ordinarily, in order to border the anterior lobe of the mesogastric

area. The external frontal lobes are limited next the orbits also only by slight depressions. The inferior edge of the smooth, though minutely punctate front, is interrupted in the middle by a broad but shallow emargination.

The lateral margins of the cephalothorax are armed with a prominent epibranchial tooth behind the external orbital angle, and this tooth projects laterally a little more outward than the external angle of the orbit, so that the cephalothorax presents its greatest width at the epibranchial teeth. Behind the second antero-lateral i. e. the epibranchial tooth, which is a little longer than the first tooth formed by the outer angle of the orbits, still a very slight trace of a second epibranchial tooth is seen, and behind it the lateral margins appear somewhat concave. The posterior margin, finally, is just half as broad as the width of the cephalothorax.

The lobe at the infero-internal angle of the orbits is very small. The second joint of the external maxillipedes is longitudinally grooved and the third joint oval, scarcely longer than broad. Abdomen and sternum are smooth, sparsely punctate. The former (fig. 6^a) is rather narrow; the terminal segment is exactly as long as its posterior margin is broad; the somewhat shorter, penultimate segment, the lateral margins of which are slightly convex, is just half as long as its posterior margin and the antepenultimate segment is scarcely shorter than the penultimate.

As regards the chelipedes of the male, I will remark that the outer surface of the arms is transversely rugose, that the upper margin is unarmed at its distal end and that the little prominent anterior margin, though somewhat granular, is also unarmed. The upper surface of the wrist is transversely rugose and unarmed at its internal angle. The fingers are scarcely longer than the palm. The convex outer surface of the palm is coarsely and irregularly punctate, but for the rest quite smooth, without a trace of granulation; its inner surface is somewhat granular near the articulation of the fingers,

the arcuate inner margin of the upper part of the palm finally, between the articulation of the mobile finger and that of the carpus, is formed by a crest of small granules (fig. 6b). The mobile finger is a little punctate at its base, for the rest quite smooth, and its upper margin presents a longitudinal row of seven or eight small acute teeth on its proximal half. The inner margin is armed with ten or twelve small teeth, of which one at the base, one in the middle and one at the end are a little larger. The index is conical, its outer surface convex and smooth, not at all punctate, like that of the mobile finger, and the under margin is also smooth; its inner margin is armed with several teeth of somewhat unequal size.

The ambulatory legs are stout. The meropodites are enlarged, so that e. g. those of the penultimate pair are only a little more than twice as long as broad ($8\frac{1}{4}$ mm. long and $3\frac{1}{2}$ mm. broad); these joints are transversely rugose on their outer surface, their upper margin ends into an acute tooth before the distal end and the lower margin is unarmed as usually. The propodites are also short, those of the penultimate pair e. g. are scarcely three times as long as broad and the dactylopodites of all the legs are a little shorter than the propodites. The three last joints are hairy on their margins.

Distance between the external orbital angles .	$12\frac{1}{4}$ mm.
Greatest width of the cephalothorax	$12\frac{1}{2}$ „
Length of the cephalothorax	10 „
Breadth of the front between the orbits . .	$7\frac{1}{4}$ „

Ses. sulcata Smith is, indeed, closely allied to our species, but the interregional grooves, especially on the anterior part of the cephalothorax, are described as deep and well marked sulci, from which this species has doubtless received its name, so that I suppose it to be a different form, though it may be possible that the absence of grooves in our individual from Curaçao must be ascri-

Notes from the Leyden Museum, Vol. XIV.

bed to its small size, as the cephalothorax of *Ses. sulcata* attains to a breadth of 31 mm.

Ses. crassipes is probably likewise different, for the cephalothorax of this species seems to be a little less enlarged, the upper surface rugose, the frontal margin profoundly emarginate and the outer surface of the hands covered with very small scales („minutissime squame”).

14. *Caridina japonica*, n. sp.

(Figs. 7 and 8).

Six specimens from Kagar, Hayagana, Japan.

These specimens, which were kindly presented to me with some other species from Japan by Dr. J. Anderson, are nearly all of the same size and 32 or 33 mm. long from the tip of the rostrum to the end of the telson. It is to *Caridina Weberi* de Man, from Celebes and Flores, that this species is most closely allied. The rostrum is small and closely resembles that of *Car. Weberi*; it is somewhat directed downwards and scarcely reaches to the middle of the penultimate joint of the upper antennae, sometimes even only to the distal end of the first joint. The upper margin is straight or very slightly concave and the point of the rostrum very acute; both margins are dentate. The formulae of these teeth for the six specimens are the following: $\frac{23}{18}$, $\frac{21}{17}$, $\frac{19}{17}$, $\frac{17}{16}$, $\frac{19}{8}$, $\frac{15}{5}$. The number of teeth on the upper margin therefore varies from 15—22, those of the lower margin from 10—18, when the two last specimens are considered as making an exception. The teeth of the upper margin are comparatively a little smaller than those of *Car. Weberi* and generally decrease somewhat in size towards the tip; like in that species all the teeth are standing on the rostrum itself, none of them on the cephalothorax, and the foremost tooth stands at a small distance from the tip. The teeth of the lower margin are smaller than those of the upper and mostly increase slightly in length anteriorly.

Notes from the Leyden Museum, Vol. XIV.

The cephalothorax is armed, as usual, with an acute antennal tooth and the fronto-lateral angle is rounded. The telson, which is somewhat shorter than the uropoda, presents on its upper surface six or seven pairs of small spinules and some others are found on its posterior margin. The peduncle of the upper antennae is a little shorter than the antennal scales and reaches as far forward as the spine on the lateral margin of the latter; the second joint is a little longer than the third and a little shorter than the first. The lateral spine on the basal joint does not reach to its anterior margin and the spinule into which terminates the lateral margin of the basal joint, measures scarcely a fourth of the length of the second joint. The peduncle of the outer antennae reaches nearly to the distal end of the penultimate joint of the peduncle of the upper antennae. The outer foot-jaws scarcely reach as far forward as the antennal scales.

The anterior legs reach as far forward as the rostrum and fully resemble those of *Car. typus* M. E. The wrist, which is scarcely shorter than the merus, has the same form as in *Car. typus*; it is conical, deeply excavated at its distal extremity and here nearly as broad as it is long (fig. 7). The hand is a little longer than the carpus, and the fingers, hairy at the ends as usually, are slightly longer than the palm. The legs of the second pair (fig. 7^a) are reaching to the middle of the terminal joint of the antennular peduncle. The carpus is twice as long as that of the first pair, slightly excavated at its distal end and about five times as long as it is broad at the distal end. The hand is almost as long as the wrist, and the fingers, hairy at their tips, are twice as long as the palm. The legs of the third pair extend a little beyond the antennal scales, the fourth reach beyond them with their dactylopodites and the fifth are scarcely shorter. The meropodites of the three posterior pairs of legs are armed with four (or five) small spinules. The dactylopodites of the third and fourth pair are similar to those of *Car. Weberi*; those

Notes from the Leyden Museum, Vol. XIV.

of the third pair measure almost a third, those of the fourth pair a fourth and those of the fifth pair a fifth of the length of their propodites. The dactylopodites of the third and fourth pair are armed along their inner margins with four or five spinules which gradually increase in length, those of the fifth pair, also agreeing with those of *Car. Weberi*, are provided along their inner margin with 50—60 spinules, the five or six foremost of which slightly become thicker and are a little more than three times as long as broad at their base. This Japanese *Caridina* is, consequently, most closely allied to *Car. Weberi* (fig. 8 and 8^a) and must, perhaps, even be regarded as a mere local variety of it, the principal difference being the more profoundly excavated carpus of the anterior legs.

Car. denticulata de Haan, however, that likewise inhabits Japan, is certainly a different species. The rostrum reaches to the end of the peduncle of the upper antennae, and the distal third of the upper margin is described as entire. De Haan says that the carpus of the anterior legs is similar to that of *Car. typus*, but in his figure the wrist of these legs appears longer and scarcely excavate, so that in my opinion this species presents a much greater resemblance to *Car. laevis* Heller from Java.

15. *Hippolyte ponapensis* Ortmann.

Hippolyte ponapensis, Ortmann, Die Decapoden-Krebse des Strassburger Museums, in: Zoolog. Jahrbücher, Abth. für System., Geogr. und Biologie der Thiere, Bd. V, 1890, S. 502; Taf. 36, fig. 20, 20d.

This species is certainly identical with *Hetairocaris orientalis* de Man (Notes from the Leyden Museum, Vol. XII, 1890, p. 122; pl. 6, fig. 16). Ortmann founded his species upon a male and a female from the Carolines, Ponapé: the two ova-bearing females described by me, were likewise collected at the isle of Ponapé. The paper in which I published my description, was issued at Leyden in April 1890, whereas Ortmann's paper was pu-

Notes from the Leyden Museum, Vol. XIV.

blished six months afterwards, namely in October. My description has therefore the priority. Ortmann's specimens, as well as those described by me, were purchased from the Museum Godeffroy.

Middelburg, May 1892.

EXPLANATION OF PLATE 7—10.

- Fig. 1. *Heteropanope tridentata* Maitland, adult male, $\times 2$; 1a abdomen of the male, $\times 2$; 1b larger, 1c smaller chela of the male, $\times 2$; 1d larger chela of an ova-bearing female specimen, the cephalothorax of which is $11\frac{1}{2}$ mm. broad, $\times 2$.
- 2. *Geotelphusa picta* v. Martens, adult female specimen from Java, collected by Kuhl and van Hasselt, $\times 1\frac{1}{4}$; 2a cephalothorax of this specimen looked at from the frontside, $\times 1\frac{1}{4}$; 2b outer foot-jaw of the same, $\times 1\frac{1}{4}$; 2f smaller i. e. right chela of this adult female specimen, $\times 1\frac{1}{4}$; 2c abdomen of a male from unknown locality, the cephalothorax of which is 37 mm. broad, $\times 1\frac{1}{4}$; 2e smaller chela of this male specimen, $\times 1\frac{1}{4}$; 2d larger hand of an adult male of which the locality is unknown, $\times 1\frac{1}{4}$.
- 3. *Geotelphusa loxophthalma* de Man, adult male from Borneo, $\times 1\frac{1}{4}$; 3a cephalothorax looked at from the frontside, $\times 2$; 3b outer foot-jaw, $\times 2$; 3c abdomen, $\times 2$; 3d larger, 3e smaller chela of the male, $\times 1\frac{1}{4}$.
- 4. *Sesarma recta* Randall, adult male from Surinam, $\times 1\frac{1}{4}$; 4a abdomen of the male, $\times 2$; 4b hand of the male, $\times 3$; 4c the same viewed at from above, showing the remarkable enlargement of the mobile finger, $\times 3$; 4d hand of a female specimen from the same locality, the cephalothorax of which is $14\frac{1}{2}$ mm. long, $\times 2$.
- 5. *Sesarma angustipes* Dana, adult female from St. Domingo, $\times 1\frac{1}{4}$.
- 6. *Sesarma curacaoensis* de Man, n. sp., male individual from Curaçao, $\times 2$; 6a abdomen of this male, $\times 2$; 6b hand of the same individual, $\times 4$.
- 7. *Caridina japonica* de Man, n. sp., carpus and hand of the first pair of legs, $\times 12$; 7a carpus and hand of the second pair of legs, $\times 8$.
- 8. *Caridina Weberi* de Man, carpus and hand of the first pair of legs of a specimen from Koting, Flores, $\times 12$; 8a carpus and hand of the second pair of legs of the same individual, $\times 8$.

NOTE XXXVII.
THE BIRDS OF SUMBA

BY

A. B. MEYER.

In his article on the birds of Sumba (antea pp. 196—204) Mr. Büttikofer has enumerated 32 species from this seldom visited island, but, in stating that Dr. ten Kate's collection was the first one from there, he has overlooked the fact, that I published in the year 1881, in the „Verhandlungen der k.k. zoologisch-botanischen Gesellschaft in Wien" pp. 759—767, a list of birds from Sumba, based upon materials received from Dr. Riedel, the well known and meritorious investigator and collector on the islands of the eastern half of the Indian Archipelago, in which list I already enumerated 40 species.

With the exception of 8, viz.:

<i>Astur torquatus</i> (T.)	<i>Artamus leucogaster</i> (Val.)
<i>Sauropatis chloris</i> (Bodd.)	<i>Calornis minor</i> (Bp.)
<i>Oriolus broderipi</i> Bp.	<i>Megapodius duperreyi</i> Less.
<i>Terpsiphone affinis</i> (Blyth)	<i>Numenius variegatus</i> (Scop.),

Mr. Büttikofer's and my lists contain different ones, and, thus, the number of species now known from Sumba is raised to 64, which is, no doubt, only a part of the avifauna of the island. Among these 64 species only 3 appear to be peculiar to Sumba, viz.:

Ninox rudolfi M.
Graucalus sumbensis M.
Dicaeum wilhelminae B.

Notes from the Leyden Museum, Vol. XIV.

I further described a subspecies of *Tanygnathus megalorhynchus* from there as *sumbensis*, but Count Salvadori, in his recently published Catalogue of the Psittaci (British Museum Catalogues, Vol. XX, p. 428, note, 1892) greatly doubts the correctness of the locality ascribed to these specimens and was not able to recognize the differences pointed out by myself. I do not see sufficient reason to doubt the habitat, moreover, all 4 specimens show the same discriminating characters, small though they may be; this question, however, can only be decided by further materials. Dr. ten Kate did not procure a single parrot, whereas I enumerated, besides the one just mentioned, 3 species, on one of which I take the opportunity of offering a few remarks.

It is that which I then called *Geoffroyus jukesii* Gr. (l. c. p. 762) and of which I said, that it also occurs on Timor and Flores. Later on, in 1884, I mentioned a specimen under the same specific designation from the island of Wetter (Sitzungsberichte der Gesellschaft Isis in Dresden, Abh. I, p. 15), calling attention, however, to differences of size. Both notes escaped Count Salvadori in his most excellent and useful catalogue (p. 402 sq.), where he distinguishes the following species:

G. personatus (Shaw) = *jukesii* (Gr.) from Timor, Samao, Wetter.

G. floresianus Salv. from Flores.

G. sumbavensis Salv. from Sumbawa.

Guided by Salvadori's descriptions, I went again over the 3 Sumba-specimens of the Dresden Museum and came to the result, that the Sumba-form cannot be relegated to any of these 3 species. While *G. floresianus* and *sumbavensis* agree with *G. rhodops* (Gr.) in their purer and darker green coloration, the Sumba-specimens belong to Salvadori's first group (p. 400); they have the yellowish green of *G. personatus* and its allies, but they cannot be designated as *personatus* on account of their larger size and the cap coming much lower down on the nape. I, therefore, propose to call the Sumba-form:

Notes from the Leyden Museum, Vol. XIV.

Geoffroyus tjindanae

after one of the indigenous names of the island of Sumba, viz. Tjindana. If Salvadori had not bestowed specific rank on *G. floresianus* and *sumbavensis*, I would have given only a subspecific one to the Sumba-form, but in accordance with those I call it simply *G. tjindanae*. Moreover it would not be quite easy to place the subspecific forms of these different islands in every case under the right species; there would arise difficulties and, instead of creating clearness, confusion would result.

The differences of size, compared with Salvadori's measurements in English inches (p. 403), are the following:

G. personatus: wing 5.6—5.8, tail 2.7—3, bill 0.8—0.9

G. tjindanae: „ 6.3—6.7, „ 3.5, „ 1—1.05.

The measurements of *G. tjindanae* in millimeters are:

	♂	♀	juv.
total	250—260	250	230—240
wing	168	171	160
tail	90	88—89	85
tarsus	13.5	13.5	13
bill	25	26	25

The future will prove, whether there are still other differences between these two forms; I have now before me only one specimen of *personatus* from Wetter to compare with 3 from Sumba.

I further wish to correct an error in my paper of 1881. On page 767 it should be

Bubulcus coromandus (Bodd.)

instead of *Herodias nigripes* (T.). — Finally the following remark:

In the memoir of 1884, quoted above („Isis" p. 19), I recurred to *Merops ornatus* Lath. from Sumba, calling attention to a difference between Sumba-specimens and

Notes from the Leyden Museum, Vol. XIV.

those from other localities, viz. the blue under the black band of the throat. Dr. ten Kate got no specimen of *Merops* on Sumba, and H. E. Dresser in his monograph of the *Meropidae* (1884—86), under the head of *M. ornatus*, does not mention the locality of Sumba at all, having missed both my notices. An unlucky star appears to shine over our knowledge of the avifauna of Sumba. Not only that the birds themselves are very insufficiently known up to the present, but the few notes which exist in literature, appear to have had the fate of partially escaping the eyes of such careful ornithologists as Büttikofer, Salvadori and Dresser, though I published my paper in a periodical, in which nearly all papers of the distinguished Austrian ornithologist von Pelzeln have appeared and which, therefore, cannot stand in a hidden corner of an ornithologist's library.

Royal Zoological Museum of Dresden,

June 3, 1892.

Notes from the Leyden Museum, Vol. XIV.

NOTE XXXVIII.

EINE NEUE CALANDRIDEN-ART DER GATTUNG
PARATASIS, CHEVR. AUS JAVA

VON

Dr. K. M. HELLER.

Paratasis viridiaenea, n. sp. ♀.

Elliptico-ovata, glabra supra planiuscula, capite, thorace pygidioque nigro; elytris viridiaeneis, singulo tenuiter quinquestriato; subtus rufo-ferruginea; tarsi, tibiis, coxis, trochanteribus, basi apiceque femorum et segmentis ventralibus apice, nigris; rostro arcuato thorace paulo brevior, ante basim paulo tumido, subtiliter punctulato; capite subtilissime punctato, inter oculos puncto intruso, oculis pone marginem inferiorem sulco arcuato; thorace medio lobo producto eoque utrinque sinuato, subtilissime et confertim punctato punctisque majoribus dispersis; antennis articulo primo funiculi obconico longiore, secundo brevior, quarto longitudine latiore. — Longit. (capite non computato) 24 mm.

Patria: Insula Java orientalis, regio montana.

Schlanker als *P. rubiginea* Wied. und *elegans* Guér. Kopf, Fühler, Afterdecke, Hüften, Schenkelanhänge, ferner die Schenkel an der Wurzel und Spitze, die ganzen Schienen und Füße, der Hinterrand des 2., 3., 4. und 5ten Bauchsegmentes, Vorderbrust zwischen den Vorderhüften und der Prosternalfortsatz schwarz. Flügeldecken und Schildchen metallisch grün, wenig glänzend. Unterseite und mitt-

Notes from the Leyden Museum, Vol. XIV.

lerer Theil der Schenkel bräunlich roth. Rüssel sanft gebogen, etwas seitlich zusammengedrückt, über der Einlenkungsstelle der Fühler angeschwollen, kürzer als das Halsschild (kürzer als bei *P. elegans* Guér. ♀), genau so lang wie die Naht von der Spitze des Schildchens bis zur Flügeldeckenspitze gemessen, ziemlich dicht und fein punctirt, im ersten Drittel mit einer glatten Längslinie auf dem Firste. Schaft der Fühler halb so lang wie der Rüssel, zweites Glied der Geissel kürzer als das erste, das dritte so breit als lang, das vierte breiter als lang, 5. und 6. deutlich quer, die Keule wie bei *elegans* Guér. Kopf fein und ziemlich dicht punctirt, zwischen den Augen mit einem eingestochenen Punct, Unterrand der Augen durch einen deutlichen Zwischenraum getrennt, neben dem hinteren Theil des Unterrandes mit einer tiefen gebogenen Furche, die zwischen den Augen unterbrochen wird, hinter der Unterbrechungsstelle ebenfalls ein eingestochener Punct.

Prothorax vorne schmal abgeschnürt, sanft gewölbt, Mittellappen leicht niedergedrückt, die Seiten des Halsschildes nach vorne schwach convergirend, vor der Mitte zugerundet, Vorderrand leicht ausgerandet, überall äusserst dicht und sehr fein punctirt, ausserdem mit sehr zerstreuten feinen Puncten, Halsschildlappen in der Mitte mit schwach angedeutetem Längskiel. Vorderbrust ebenfalls mit doppelter Punctirung, die grösseren Puncte etwas körnig und eine schuppenartige kurze Borste tragend (letztere nur bei starker Vergrösserung deutlich erkennbar). Hinterleibsringe sparsamer, aber grösser als bei *elegans* Guér. punctirt.

Flügeldecken oben flachgedrückt, nach hinten zu schwach verjüngt, vor der Spitze leicht niedergedrückt, an den gerundeten Schultern am breitesten, Seitenrand hinter der Mitte leicht ausgebuchtet, Spitze der Decken in flachen Bogen abgerundet, Naht kaum verkürzt, Nahtwinkel etwas stumpfwinkelig (bei *elegans* scharf rechtwinkelig), jede Decke mit 5, vor der Spitze endigenden, vertieften Streifen, 3., 4. und 5. Streifen an der Basis erweitert und ver-

Notes from the Leyden Museum, Vol. XIV.

tieft, Zwischenräume ungleich breit, der 2te (respective 3te von der Naht ab) der breiteste, jedoch schmaler als 3. und 4. zusammengenommen, 5ter vor dem letzten Drittel der Flügeldecken verkürzt und hinten in einige gereifte Punkte aufgelöst. Ebenso im ersten Drittel der Decken zwischen Schulter und Seitenrand mit einer Punctreihe, sonst überall weitläufig und fein punctirt; Seitenrand der Decken, die Seiten des Analsegmentes, Pygidium an der Spitze, Unterseite der Mittel- und Hinterschenkel, Innen-seite sämtlicher Schienen und Vorderrand der Vorderbrust, so wie die Unterseite der Tarsen gelbbraun bewimpert.

Pygidium gröber als die Flügeldecken punctirt, jeder Punct mit einer kurzen steifen Borste, hinteres Drittel mit einem Mittelkiel.

Beine bei ähnlichem Bau wie *elegans* Guér. auffallend durch das 2te Fussglied verschieden, das im Gegensatz zu *elegans*, bei *viridiaenea* quer ist.

Länge vom Halsschildvorderrand bis Pygidiumspitze 24 mm., Länge des Rüssels 8.5, Länge des Halsschildes 9.5 mm., Breite der Flügeldecken an den Schultern 9.5 mm.

Nach Analogie mit anderen Arten dürfte das ♂ durch gröbere etwas körnige Punctirung des Rüssels, so wie durch eine gelbbraune Bürste vor der Rüsselspitze vom ♀ zu unterscheiden sein.

Das einzige Stück, ein ♀, dieser von allen Calandriden schon durch die Färbung verschiedenen und jedenfalls auch sehr seltenen Art, verdankt das Museum einer Schenkung des Herrn G. v. Bülzingslöwen aus dem Jahr 1884, es stammt, so wie alle anderen gleichzeitig dem Museum übergebenen Insecten aus den Gebirgen von Ost Java.

Die drei nun bekannten *Paratasis*-Arten lassen sich auf folgende Weise kurz unterscheiden:

Halsschild und *Pygidium* ganz schwarz, Flügeldecken metallisch grün *viridiaenea*, n. sp. — Java.
Halsschild grösstentheils roth, nur der Hinterrand des Mittellappens, selten ein oder zwei Flecken auf der Scheibe und die Basis der Flügeldecken und die ganzen Schultern

Notes from the Leyden Museum, Vol. XIV.

schwarz. Mittellappen des Halsschildes kürzer als bei der folgenden Art, seine Seiten nicht ausgerandet

rubiginea Wied. (ex parte). —

Bengalen, Cambodja.

Halsschild vorherrschend schwarz, nicht nur der Hinterrand des Mittellappens, sondern auch ein grosser die Scheibe einnehmender dreieckiger Fleck und beiderseits am Rande ein breites Band schwarz, Schultern roth, die schwarze Zeichnung der Flügeldecken durchwegs breiter als bei voriger Art. Mittellappen des Halsschildes beiderseits ausgerandet

elegans Guér. (*rubiginea* Wied. auct.). —

Java, Borneo, Nias (Coll. Faust).

ANMERKUNG: Wiedemann's Beschreibung im Zoologischen Magazin, Altona 1819, p. 174 unter »25. *Calandra rubiginea*'' betrifft zwei verschiedene Arten, wobei irrthümlicher Weise das ♂ für ein ♀ von *rubiginea* und umgekehrt das ♀ einer anderen Art für das ♂ von *rubiginea* gehalten wurde. Die lateinische Diagnose ist natürlich so abgefasst, dass sie auf beide Arten passt; nur die Fundortangabe Bengalia ist bestimmend, welche der beiden Arten den Namen *rubiginea* zu führen hat. Die Unterschiede, die Wiedemann bei seinen zwei Stücken für sexuelle hält, sind grösstentheils Speciescharaktere, da bei beiden Arten ♂ und ♀ untereinander sehr ähnlich und ersteres hauptsächlich nur durch eine rothgelbe Haarbürste vor der Rüsselspitze ausgezeichnet ist. (Cf. Notes from the Leyden Museum, XIII, 1891, p. 154, 2).

Königl. Zoolog. Museum zu Dresden,

8. Juni 1892.

INDEX.

A.

Abrachius 210.
 Acanthiza 195.
 Acherus 37, 49.
 Acrocephalus 13, 16, 23, 197.
 Acroteriasus 49.
 acuminatus (Aegus) 140.
 acutispinosa (Culcita) 72—76, 95, 113, 118.
 Aegotypus 143.
 Aegus 140, 143.
 aemulus (Micronychus) 42.
 aeneomicans (Cyclommatus) 5.
 aeneus (Ceuthmochares) 29.
 Aeolus 10.
 aeratus (Chalcodes) 140.
 afer (Coccystes) 29.
 „ (Eurystomus) 22.
 affinis (Cyclommatus) 3, 45, 141, 144.
 affinis (Milvus) 197.
 „ (Terpsiphone) 198, 265.
 africana (Schizorrhis) 29.
 Agriorrhynchus 177, 185.
 albolineatum (Ichthyopisthen) 36.
 Alcedo 22.
 Alethe 22.
 Alseonax 198.
 alternans (Melampyrus) 42.
 altingia (Liquidambar) 123.
 Amadina 132.
 amboinensis (Cyclotus) 159.
 amoenus (Hormocerus) 180, 186.
 Amorphocephalinae 176, 184.
 Amorphocephalus 176, 185.
 Ampelis 130.
 Amphidromus 151, 152, 153.
 anceps (Trichalus) 40, 41, 42.

Andropadus 22, 23.
 angustifrons (Telphusa) 241.
 angustipes (Sesarma) 225, 253, 255, 264.
 annae (Amphidromus) 151.
 Anoxyopisthen 34.
 antennatus (Diurus) 184, 186.
 Anthenea 110.
 Anthothreptes 194, 201.
 Anthreptes 22.
 Anthus 23, 130, 197.
 apicalis (Diabathrarius) 50, 51.
 Ardea 30, 130.
 ardens (Coliopasser) 28, 29.
 Ardeola 30.
 arenosa (Culcita) 68, 71, 73—76, 92, 94, 95, 97, 116, 118.
 areolata (Culcita) 117.
 argillacea (Helix) 149.
 armata (Nidorellia) 104.
 armillata (Melania) 157.
 arnotti (Saxicola) 18.
 „ (Thamnolaema) 18.
 Arrhenodinae 176, 184.
 Artamides 198.
 Artamus 198, 265.
 Asterias 112, 114.
 Astur 20, 196, 265.
 atricapilla (Ardea) 30.
 „ (Munia) 132.
 atripennis (Crateropus) 22.
 „ (Dicrurus) 23.
 atrofuscus (Metriorrhynchus) 42.
 aurantius (Hyphantornis) 28.
 auratus (Campsosternus) 9.
 aureifrons (Zosterops) 199.
 australasiae (Ipthimorhinus) 208.
 australis (Acrocephalus) 197.
 aygula (Cercocetus) 121.

B.

baliensis (Nanina) [147](#).
 barbatus (Criniger) [22](#).
 " (Pycnonotus) [23](#).
 bartletti (Malimbus) [24](#).
 Baryrrhynchus [177](#), [185](#).
 Batatas [124](#).
 Batrachostomus [63](#).
 Baza [20](#).
 bellicosus (Odontolabis) [140](#).
 Belophorinae [184](#).
 Berenicornis [29](#).
 Bias [23](#).
 bicolor (Nigrita) [29](#).
 " (Stenelmis) [189](#).
 bifasciata (Loxia) [130](#).
 bimaensis (Nanina) [149](#).
 binervosa (Stenelmis) [189](#).
 binotatus (Caprimulgus) [63](#).
 bisulcatus (Trachelizus) [162](#), [185](#).
 blissetti (Diaphorophyia) [23](#).
 borneoensis (Pachyteria) [218](#).
 borrei (Agriorrhynchus) [177](#), [185](#).
 bosschae (Carpophilus) [43](#).
 " (Hydrocoptus) [12](#).
 " (Parametopia) [44](#).
 " (Stenelmis) [188](#), [190](#).
 brachyptera (Hyphantornis) [28](#).
 " (Sitagra) [28](#).
 brachypterus (Symplectes) [28](#).
 brachyrhynchus (Oriolus) [23](#).
 Brenthidae [161](#).
 brevicaudata (Camaroptera) [22](#).
 brevicaudatus (Schizotrachelus) [180](#),
 [186](#).
 brevicollis (Taphes) [42](#).
 broderipi (Oriolus) [194](#), [197](#), [265](#).
 bubalus (Eurytrachelus) [140](#).
 Bubuleus [267](#).
 bucephalus (Eurytrachelus) [140](#).
 buffoni (Corythaix) [29](#).
 Bulenides [42](#).
 buqueti (Hexarthrius) [139](#).
 buruensis (Rhipidura) [205](#).
 büttikoferi (Oxyopisthen) [36](#).
 Büttikoferia [136](#), [138](#).
 büttneri (Anoxyopisthen) [34](#).

C.

cabanisi (Munia) [202](#), [203](#).
 Calandra [272](#).
 Calochromus [42](#).
 Calornis [201](#), [265](#).
 calva (Treron) [29](#).

Camaroptera [22](#).
 Camira [54](#).
 Campsosternus [9](#).
 canaliculatus (Cyclommatus) [1](#), [3](#),
 [144](#).
 candezei (Eurytrachelus) [140](#).
 canicapilla (Xenocichla) [22](#).
 caniceps (Sigmodus) [23](#).
 caprata (Pratincola) [197](#).
 Caprimulgidae [63](#).
 Caprimulgus [63](#).
 Cardanus [141](#).
 Caridina [225](#), [261](#), [264](#).
 carinatus (Odontolabis) [142](#).
 Carpophilus [43](#).
 caryocatactes (Nucifraga) [130](#).
 Casnonidea [54](#).
 Cassinia [23](#).
 castanea (Diaphorophyia) [23](#).
 castaneus (Metopodontus) [142](#).
 Cautires [42](#).
 caviventris (Ulomascus) [138](#).
 Cediocera [181](#), [183](#), [185](#).
 Centropus [29](#).
 Ceocephalinae [179](#), [184](#).
 Ceocephalus [173](#).
 Cerambycidae [54](#).
 Cercocebus [121](#).
 Cerithidea [155](#).
 Cerobates [162](#), [185](#).
 Ceryle [22](#).
 Ceuthmochares [29](#).
 ceylonensis (Culicicapa) [198](#).
 ceylonica (Miolispa) [172](#).
 " (Stenelmis) [189](#).
 Chalcococcyx [194](#).
 Chalcodes [140](#).
 Charadrius [30](#), [204](#).
 Chaunonotus [23](#).
 chloris (Dacelo) [194](#).
 " (Nicator) [23](#).
 " (Sauropatis) [194](#), [197](#), [265](#).
 Chlorocichla [22](#).
 Chrysococcyx [29](#).
 cidaris (Nanina) [146](#).
 cilipes (Prosopocoelus) [191](#).
 cinerascens (Fraseria) [23](#).
 cinereus (Parus) [195](#).
 cinnamomeus (Metopodontus) [139](#).
 cinnamomi (Orychodes) [177](#), [185](#).
 Cinnyris [22](#), [194](#), [201](#).
 cirratus (Spizaetus) [193](#).
 Cisticola [197](#).
 cisticola (Cisticola) [197](#).
 Cladognathus [31](#), [139](#).
 Cladophorus [42](#).

clavatum (*Oxyopisthen*) 35.
 clavus (*Melania*) 156.
 Coccystes 29.
 Cochlostyla 149.
 cochlostyloides (*Nanina*) 148.
 cognatus (*Bulenides*) 42.
 Coliopasser 28, 29.
 Coliuspasser 28, 29.
 collare (*Hysterarthron*) 54.
 Collocalia 194.
 concinna (*Pitta*) 197.
 concolor (*Camaroptera*) 22.
 " (*Coliopasser*) 28.
 " (*Eurytrachelus*) 144.
 " (*Vidua*) 29.
 conformis (*Metanaeus*) 42.
 " (*Miolispa*) 175, 185.
 consobrinus (*Schizotrachelus*) 180,
 186.
 contrarius (*Amphidromus*) 153, 154.
 convexicollis (*Ichthyopisthen*) 35.
 coriacea (*Culcita*) 65, 66, 67, 69,
 74, 75, 76, 77, 79, 80, 86, 87,
 90, 91, 92, 93, 94, 95, 96, 97,
 114, 116, 117, 118.
 coromandus (*Bubulcus*) 267.
 Corvus 23.
 Corythaix 29.
 Corythornis 22.
 Cossypha 22.
 costellaris (*Melania*) 156.
 crassa (*Geotelphusa*) 240, 242, 244.
 " (*Telphusa*) 241.
 crassimanus (*Pilumnopus*) 225, 227,
 234.
 crassipes (*Sesarma*) 258, 261.
 Crateropus 22.
 Criniger 22.
 cristatus (*Malimbus*) 24.
 " (*Sycobius*) 24, 25.
 cucullata (*Spermestes*) 29.
 cuculoides (*Baza*) 20, 21.
 Culcita 65, 66, 67, 73, 77, 84, 87,
 90, 92, 95, 96, 97, 100, 101, 103,
 105, 111, 116.
 Culicicapa 198.
 cumingii (*Telphusa*) 240.
 cupreicauda (*Lamprocolius*) 24.
 curacaoensis (*Sesarma*) 225, 257,
 264.
 curtisi (*Aegus*) 143.
 curvirostris (*Andropadus*) 23.
 cyanolaemus (*Cinnyris*) 22.
 cyanostigma (*Corythornis*) 22.
 Cyclommatus 1, 3, 6, 45, 140, 141,
 143, 144.

Cyclotus 158.
 cynamolgus (*Cercocebus*) 121.
 cynnamomi (*Orychodes*) 177, 185.
 Cyphagogus 184.
 Cypselidae 63.
 Cyrtopisthen 36.

D.

Dacelo 194.
 decipiens (*Prosopocoelus*) 31.
 dehaani (*Cyclommatus*) 1, 3, 4, 6,
 45, 141, 144.
 dehaani (*Hormocerus*) 180, 186.
 dehiscens (*Baryrrhynchus*) 177, 185.
 denticulata (*Caridina*) 263.
 deplanatum (*Oxyopisthen*) 34.
 Diabathrarius 49.
 diademata (*Alethe*) 22.
 Diaphorophya 23.
 Dicaeum 199, 205, 265.
 Dicrurus 23.
 Dihammatu 42.
 Dilophotes 42.
 Dioscorea 124.
 Diplanchias 128.
 discoidea (*Asterias*) 114, 115.
 " (*Culcita*) 67, 77, 80, 90,
 112.
 dispar (*Micronychus*) 42.
 Dissemurus 198.
 Ditoneces 42.
 Diurus 183, 184, 185, 186.
 Dorcus 140.
 Dryoscopus 23.
 dubius (*Bulenides*) 42.
 duperreyi (*Megapodius*) 204, 265.
 Dytiscidae 11.

E.

Ectocemus 184.
 edulis (*Batatas*) 124.
 elaphus (*Cyclommatus*) 3.
 " (*Lucanus*) 144.
 Elateridae 9.
 elegans (*Eugithopus*) 7.
 " (*Paratasis*) 269, 270, 271,
 272.
 elegantulus (*Prosopocoelus*) 139.
 elongata (*Sesarma*) 225, 256.
 elongatum (*Sesarma*) 256.
 elusus (*Xylobanus*) 42.
 emiliae (*Nigrita*) 29.
 Ephebocerinae 184.
 erythroderes (*Heteroplites*) 183.

erythropterus (Merops) 22.
 esculenta (Collocalia) 194.
 Euclea 38.
 Eugithopus 7.
 Eurycarcinus 225, 226.
 eurycephalus (Eurytrachelus) 140.
 Eurystomus 22.
 Eurytrachelus 6, 140, 141.
 Euselates 60.
 Eutrachelinae 179, 184.
 Eutrachelus 179, 185.
 exarata (Miolispa) 173, 175, 185.
 " (Stenelmis) 189.
 exaratus (Ceocephalus) 173.
 excellens (Cantires) 42.
 exilis (Dilophotes) 42.
 eximia (Xenocichla) 22.
 expletus (Plateros) 42.
 exserta (Helicina) 159.
 eydouxii (Sesarma) 225, 248.

F.

falcinellus (Ibis) 130.
 faunicolor (Cyclommatus) 4, 6, 140,
 144.
 femoralis (Perissus) 54.
 ferrugineus (Lycostomus) 42.
 " (Lycus) 42.
 Figulus 141.
 finschi (Cassinia) 23.
 flammiceps (Pyromelana) 28.
 flava (Motacilla) 23.
 flaviventris (Sporaeginthus) 204.
 flavidus (Trichalus) 41, 42.
 florensis (Glenea) 221.
 floresianus (Geoffroyus) 266, 267.
 floris (Artamides) 198.
 forbesi (Charadrius) 30.
 forcipatus (Diurus) 184, 185.
 francisci (Centropus) 29.
 Fraseria 23.
 frey-gessneri (Cyclommatus) 1, 4,
 140.
 frontalis (Taphes) 42.
 fuliginosus (Trichalus) 42.
 Fuligula 30, 130.
 fuligula (Fuligula) 30.
 fulvotincta (Pachycephala) 194.
 fumigatus (Xylobanus) 42.
 furcillatus (Amphidromus) 153.
 " (Diurus) 184, 185.

G.

Garcinia 124.
 garrula (Ampelis) 130.

geoffroyi (Charadrius) 204.
 Geoffroyus 266.
 Geotelphusa 225, 234, 241, 245, 264.
 gestroi (Lycostomus) 41, 42.
 giraffa (Cladognathus) 31, 139.
 glaberrima (Cerobates) 162.
 Glareola 206.
 glaucinus (Perissus) 54.
 Glenea 221, 222.
 Glycyphila 200.
 Gnaphaloryx 6, 140.
 goffini (Trachyphonus) 29.
 Goniiodiscus 97, 101.
 goryi (Taeniodera) 57, 58.
 goudoti (Geotelphusa) 247.
 " (Telphusa) 235, 236, 237,
 239, 240.
 gracilirostris (Chlorocichla) 22.
 gracilis (Odontolabis) 144.
 Gracula 194.
 grallaria (Glareola) 206.
 granulata (Randasia) 77, 113, 115,
 117.
 Graucalus 265.
 grex (Culcita) 65, 68, 71, 72, 74,
 75, 76, 77, 79, 87, 88, 93, 94,
 101, 103, 107, 113, 116, 118.
 guerini (Sesarma) 255, 256.
 gularis (Eurystomus) 22.
 " (Merops) 22.
 guttatus (Cyclotus) 159.
 gypaetus (Eurytrachelus) 140.

H.

halata (Nanina) 149.
 Halcyon 22.
 Haplorhynchus 36, 37.
 Helicina 159.
 Helix 146, 148, 149, 150.
 Hemisodorus 140.
 Herodias 267.
 Hetairocaris 263.
 Heteropanope 225, 227, 228, 234,
 264.
 Heteroplites 182, 183.
 Hexarthrus 139.
 Himantopus 206.
 Hippolyte 225, 263.
 hirsutus (Pogonorhynchus) 29.
 hodgsoni (Batrachostomus) 64.
 Hormocerus 179, 185, 186.
 horsfieldi (Mirafr) 197.
 humilis (Xylobanus) 40, 42.
 Hydrocoptus 11, 12.
 Hylia 22.

Hyphantornis 28.
hypocrita (Trichalus) 40, 42.
hypodilus (Anthreptes) 22.
Hysterarthron 54.

I.

Ibis 130.
Ichthyopisthen 34, 35, 36.
igneus (Campso sternus) 9.
impressicollis (Aegus) 141, 143.
inaequalis (Odontolabis) 144.
indica (Heteropanope) 229, 230,
231, 232.
indicator (Criniger) 22.
indus (Bulenides) 42.
inflatus (Megapenthes) 10.
inornatus (Vanellus) 29.
inquinata (Nanina) 146.
insignis (Cyclommatus) 4.
" (Orychodes) 178.
insignita (Pachyteria) 218.
insularis (Abrachius) 211.
" (Trachelizus) 163, 165,
185.
integrifrons (Eurycarcinus) 226, 227.
intermedia (Sesarma) 251.
Iphthimorhinus 207.
Ispidina 22.
Ithysteninae 181, 184.

J.

japonica (Caridina) 225, 261, 264.
javanica (Limnaea) 154.
" (Miolispa) 167, 185.
javanicus (Hormocerus) 180, 186.
" (Trygaeus) 61.
johannae (Cinnyris) 22.
Jonthocerus 184.
jukesii (Geoffroyus) 266.
juncus (Megapenthes) 10.

K.

kaupi (Cyclommatus) 4, 5.
kirschi (Metriorrhynchus) 41, 42.
klaasi (Chrysococyx) 29.

L.

laevigata (Asterias) 114.
laevis (Amorphocephalus) 176, 185.
" (Caridina) 263.
laevus (Amphidromus) 153.
Lagriidae 54.
Lalage 198.

lambii (Pachyteria) 213.
Lamprocolus 24.
Laniarius 23.
lansbergei (Eurytrachelus) 140.
lateritia (Melania) 158.
latestrigatus (Amphidromus) 151.
laticollis (Neolucanus) 140.
latirostris (Alseonax) 198.
" (Andropadus) 22.
" (Baryrrhynchus) 177, 185.
latiusculus (Campso sternus) 9.
lessoni (Limnaea) 154, 155.
leucocephalus (Himantopus) 206.
leucogaster (Artamus) 198, 265.
" (Centropus) 29.
" (Pholidauges) 24.
leucogastra (Ispidina) 22.
leucolaema (Myrmecocichla) 18.
" (Thamnotaea) 18.
leucolopha (Berenicornis) 29.
leucopleurus (Criniger) 22.
leucorhynchus (Dryoscopus) 23.
levaillanti (Myrmecocichla) 18.
liberiensis (Büttikoferia) 137.
limbata (Meliphaga) 199, 200.
" (Ptilotis) 199, 200.
" (Stigmatops) 200.
Limnaea 154.
limnaetus (Spizaetus) 193.
linea-alba (Oxyopisthen) 34.
linearis (Stenophida) 37, 133, 135.
lineatus (Metriorrhynchus) 42.
lineolatus (Orychodes) 178.
Liquidambar 123.
litteratus (Megapenthes) 10.
lividus (Xantho) 225.
longicauda (Scotornis) 21.
longicollis (Trichalus) 41.
longicornis (Cediocera) 181, 182,
183.
longipennis (Macrodipteryx) 21.
longirostris (Prophthalmus) 176,
185.
longirostris (Tatare) 13, 14, 15.
Loxia 130.
loxophthalma (Geotelphusa) 225,
245, 246, 264.
Lucanidae 139, 143.
Lucanus 6, 144.
ludekingii (Odontolabis) 142.
lugubris (Pachyteria) 215.
lunatus (Aegus) 141.
luscini (Tatare) 16.
luzonica (Randasia) 77, 114, 115.
Lycostomus 41, 42.
Lycus 41, 42.

M.

mackloti (Dicaeum) 205.
 macrocephalus (Prophthalmus) 176.
 Macrodipteryx 21.
 Macronota 55.
 Macronychus 187, 188.
 macrorhynchus (Corythaix) 29.
 macroscelides (Astur) 20.
 macroura (Penthetria) 29.
 macrourus (Coliuspasser) 29.
 macrura (Penthetriopsis) 29.
 macrurus (Coliopasser) 29.
 magna (Euselates) 60.
 " (Taeniodera) 60.
 maitlandi (Cyclommatus) 4, 144.
 malaccensis (Anthothreptes) 194, 201.
 malayanus (Chalcococcyx) 194.
 malimbica (Halcyon) 22.
 malimbicus (Malimbus) 24, 25.
 Malimbus 24, 26, 27.
 mangostana (Garcinia) 124.
 margaritae (Cyclommatus) 5.
 marginalis (Figulus) 141.
 marginatus (Megapenthes) 10.
 mariannae (Acrocephalus) 16.
 " (Tatara) 16.
 mauensis (Melania) 158.
 maurus (Semnopithecus) 119, 120, 121.
 maxima (Ceryle) 22.
 mechowii (Onychogymnus) 49, 50, 51.
 medius (Anthus) 197.
 megalorhynchus (Tanygnathus) 266.
 Megapenthes 10.
 Megapodius 204, 265.
 Melampyrus 42.
 Melania 155—158.
 melanoleuca (Oreicola) 204.
 melanurus (Calochromus) 42.
 " (Pithechir) 122, 123, 125, 126.
 Meliphaga 199, 200.
 mendanae (Tatara) 14, 15.
 Meropidae 268.
 Merops 22, 267, 268.
 Mesopicus 29.
 Mesotopus 6.
 metallica (Miolispa) 169, 172, 173, 185.
 metallifer (Cyclommatus) 5.
 Metanaeus 42.
 Metopodontus 6, 139, 142, 143, 144.
 Metriorrhynchus 41, 42.

Micronychus 42.
 migrans (Milvus) 130, 197.
 Milvus 130, 197.
 minor (Calornis) 201, 265.
 " (Helicina) 159.
 minusculus (Macronychus) 187.
 minuta (Tringa) 204.
 Miolispa 166, 173, 185.
 Mirafra 197.
 mnischei (Cyclommatus) 5.
 modesta (Telphusa) 234.
 modestus (Dierurus) 23.
 " (Trachelizus) 165, 185.
 moesta (Melania) 156.
 moestus (Trachelizus) 165, 185.
 mohnikei (Metopodontus) 139.
 Mola 128.
 mola (Orthragoriscus) 128.
 molucca (Munia) 196.
 moluccensis (Phya) 155.
 Motacilla 23.
 multidentatus (Cyclommatus) 5.
 Munia 132, 196, 201, 202.
 Musa 124.
 musicus (Bias) 23.
 Myiagra 197.
 Myrmecocichla 18.
 mystacea (Prinia) 22.

N.

Nanina 146—148.
 nasus (Diplanichias) 128.
 " (Mola) 128.
 " (Orthragoriscus) 127, 128.
 neglectus (Tropidorhynchus) 194, 199.
 Neolucanus 140.
 Neritina 160.
 niassensis (Pachyteria) 217.
 Nicator 23.
 Nidorellia 101, 103, 104, 105, 111, 112.
 nigra (Myrmecocichla) 18.
 " (Oenanthe) 17.
 " (Saxicola) 18.
 " (Sylvia) 18.
 " (Thamnolaca) 17.
 nigricans (Acherus) 37, 49.
 nigricops (Terpsiphone) 23.
 nigripes (Herodias) 267.
 Nigrita 29.
 nigritarsis (Euclea) 38.
 Ninox 265.
 nisorina (Munia) 202, 203, 204.
 Nisus 196.

nitens (Malimbus) [26](#).
 Nitidulidae [43](#).
 nitidum (Oxyopisthen) [36](#).
 nobilis (Eugithopus) [7](#).
 nodicornis (Euclea) [38](#).
 novae guinea (Culcita) [65](#), [67—80](#),
 [83](#), [85](#), [88](#), [89](#), [91](#), [94](#), [95](#), [105](#),
 [113](#), [116—118](#).
 nuchale (Syrnium) [21](#).
 Nucifraga [130](#).
 Numenius [130](#), [204](#), [265](#).
 nupta (Miolispa) [171](#), [185](#).

O.

oberthüri (Glenea) [222](#).
 obesa (Telphusa) [238](#).
 obscura (Psalidoproctus) [21](#).
 obscurus (Cinnyris) [22](#).
 " (Turdus) [130](#).
 obsoletus (Bulenides) [42](#).
 occipitalis (Metopodontus) [6](#), [139](#),
 [144](#).
 ocellatus (Onychogymnus) [51](#).
 ocularis (Glycyphila) [200](#).
 " (Stigmatops) [199](#), [200](#).
 Odontolabis [140](#), [142](#), [144](#).
 Oenanthe [17](#).
 Onychogymnus [49](#), [50](#), [51](#).
 opacus (Gnaphaloryx) [140](#).
 opatrinus (Hydrocoptus) [11](#).
 Oreicola [204](#).
 orientalis (Eurycarcinus) [225](#), [226](#),
 [227](#).
 orientalis (Hetairocaris) [263](#).
 " (Stenelmis) [190](#).
 Oriolus [23](#), [194](#), [197](#), [265](#).
 ornata (Cerithidea) [155](#).
 ornatus (Merops) [267](#), [268](#).
 Orthragoriscus [127](#).
 Orychodes [177](#), [185](#), [186](#).
 otaitensis (Tatara) [13](#).
 otatara (Acrocephalus) [13](#).
 " (Sitta) [13](#).
 " (Tatara) [15](#).
 Otis [130](#).
 Oxyopisthen [33](#), [34](#), [35](#), [36](#), [133](#), [135](#).
 oxytropis (Helicina) [159](#).
 ozodura (Orthragoriscus) [128](#).

P.

Pachycephala [194](#).
 Pachyteria [213](#), [215](#), [218](#).
 pallens (Dihammatus) [42](#).
 paradoxus (Syrphaptes) [130](#).

Parametopia [44](#).
 Paratasis [269](#).
 Paratelphusa [237](#).
 parryi (Dorcus) [140](#).
 Parus [195](#).
 parva (Mirafr) [197](#).
 parvus (Rallus) [130](#).
 passaloides (Hemisodorcus) [140](#).
 pasteurii (Campsosternus) [9](#).
 " (Cyclommatus) [5](#), [143](#).
 " (Pachyteria) [213](#).
 " (Prosopocoelus) [31](#), [139](#).
 pauperulus (Bulenides) [42](#).
 pectoralis (Cinnyris) [194](#), [201](#).
 Pentaceropsis [101](#).
 Pentaceros [66](#), [101](#), [103](#).
 pentangularis (Culcita) [65](#), [73](#), [74](#),
 [75](#), [76](#), [77](#), [78](#), [85](#), [115](#), [117](#), [118](#).
 Penthetria [28](#), [29](#).
 Penthetriopsis [29](#).
 Periphemus [135](#).
 Perissus [54](#).
 Peristera [29](#).
 perlevis (Limnaea) [154](#), [155](#).
 personatus (Geoffroyus) [266](#), [267](#).
 Pholidauges [24](#).
 Physa [155](#).
 picta (Geotelphusa) [225](#), [234](#), [240](#),
 [241](#), [242](#), [244](#), [245](#), [246](#), [247](#), [264](#).
 picta (Ispidina) [22](#).
 " (Stenelmis) [190](#).
 " (Telphusa) [234](#), [237](#), [240](#).
 piliferus (Orychodes) [177](#), [186](#).
 Pilumnopus [225](#), [227](#), [234](#).
 Pilumnus [228](#).
 Pithechir [122](#).
 Pitta [197](#).
 plana (Culcita) [67](#), [68](#), [71](#), [73](#), [74](#),
 [75](#), [76](#), [84](#), [101](#), [103](#), [107](#), [110](#).
 Plateros [42](#).
 platurus (Dissemurus) [198](#).
 Platyopisthen [133](#), [134](#).
 Podargidae [63](#).
 Podargus [63](#).
 poensis (Cossypha) [22](#).
 Pogonorrhynchus [29](#).
 poliochlamys (Laniarius) [23](#).
 poliophus (Batrachostomus) [63](#).
 " (Podargus) [63](#).
 politus (Cyclotus) [159](#).
 ponapensis (Hippolyte) [225](#), [263](#).
 porrecta (Limnaea) [154](#).
 Poteriphorus [37](#).
 Praonetha [54](#).
 prasina (Hylia) [22](#).
 Pratincola [23](#), [197](#).

princeps (Trygaeus) 62.
 Prinia 22.
 Prometopia 44.
 Prophthalmus 176, 185.
 propinqua (Munia) 196.
 " (Uroloncha) 196.
 Prosopocoelus 31, 139, 143, 191.
 Psalidoprocne 21.
 Pseudocyclophorus 159.
 Ptilotis 199, 200.
 pugnator (Prophthalmus) 176, 185.
 pulverulenta (Culcita) 77, 117.
 punctata (Melania) 155.
 puncticollis (Trachelizus) 162, 164,
185.
 punctularia (Munia) 204.
 punctulata (Munia) 202, 203, 204.
 purpurascens (Eurytrachelus) 6, 144.
 Pycnonotus 23.
 pygmaeus (Dilophotes) 42.
 Pyromelana 28.
 pyrrhogaster (Mesopicus) 29.
 pyrrhonotus (Anthus) 23.
 pyrrhus (Semnopithecus) 119, 120,
121.

Q.

quadrata (Sesarma) 249, 250, 252.
 quadribrachys (Alcedo) 22.
 quadrilineata (Macronota) 55.
 " (Taeniodera) 55, 56,
57, 58, 59, 60.
 quadrilineatus (Trichius) 56.
 quadrituberculatus (Macronychus)
188.
 quadrivittata (Taeniodera) 60.
 quinticolor (Munia) 201.

R.

ralloides (Ardea) 130.
 " (Ardeola) 30.
 Rallus 130.
 Randasia 77, 97, 113, 115.
 rangifer (Cyclommatus) 3, 6.
 rareguttata (Nanina) 146.
 recta (Sesarma) 225, 249, 250, 264.
 redeinanni (Zonopterus) 220.
 reflexilabris (Amphidromus) 152.
 reinga (Helix) 151.
 reinwardti (Megapodius) 204.
 remotus (Megapenthes) 10.
 reticulatus (Hormocerus) 179, 185.
 " (Xylobanus) 42.
 retrorsus (Periphemus) 135.

reynaudii (Xantho) 225, 226.
 rhinoceros (Hexarthrius) 139.
 Rhipidura 205.
 rhodops (Geoffroyus) 266.
 Rhynchophorus 208, 209, 210, 212.
 richardi (Anthus) 130.
 ricordi (Sesarma) 253, 255, 256.
 ritsemae (Orychodes) 178.
 " (Stenelmis) 189.
 " (Xylobanus) 39, 42.
 rosenbergii (Prosopocoelus) 139.
 rotundata (Parametopia) 44.
 " (Prometopia) 44.
 rubetra (Pratincola) 23.
 rubicundum (Cyrtopisthen) 36.
 rubiginea (Calandra) 272.
 " (Paratasis) 269, 272.
 rubricollis (Malimbus) 24.
 " (Sycobius) 24.
 rubropersonatus (Malimbus) 27.
 rudolfi (Ninox) 265.
 rufigula (Myiagra) 197.
 rufina (Fuligula) 130.
 rufipennis (Taeniodera) 59.
 rufobrunneus (Ditoneces) 42.
 rufoclavatum (Ichthyopisthen) 35.
 rufovittatus (Hormocerus) 180, 186.
 rufulus (Anthus) 197.

S.

sabinei (Chaunonotus) 23.
 saiga (Eurytrachelus) 140, 144.
 sanghirense (Dicaeum) 199.
 Sauropatis 194, 197, 265.
 Saxicola 18.
 scabra (Melania) 157.
 scapulatus (Corvus) 23.
 scenica (Taeniodera) 56, 57, 58.
 Schizorrhis 29.
 Schizotrachelus 180, 185, 186.
 schmideliana (Culcita) 65—69, 71—
73, 75—78, 81, 91, 92, 97, 99—
110, 112—118.
 Scotornis 21.
 scrobicollis (Hormocerus) 180, 185.
 " (Trachelizus) 163, 164,
185.
 sculpta (Helicina) 159.
 scutatus (Malimbus) 27, 28.
 sebae (Goniodiscus) 101.
 semifasciatus (Tockus) 29.
 semirubra (Stenelmis) 190.
 semitorquatus (Turtur) 29.
 Semnopithecus 119.
 senegalensis (Centropus) 29.

senegalus (Telephonus) [23](#).
 senex (Xylobanus) [42](#).
 sericeus (Metopodontus) [139](#).
 " (Metriorrhynchus) [42](#).
 " (Micronychus) [42](#).
 serraticornis (Trichalus) [41](#).
 serratifrons (Heteropanope) [227](#), [228](#),
 [234](#).
 Sesarma [225](#), [248](#), [249](#), [253](#), [256](#),
 [257](#), [264](#).
 sexmaculata (Camira) [54](#).
 sexsulcatus (Cerobates) [162](#), [185](#).
 shelleyi (Saxicola) [18](#).
 " (Thamnolaea) [18](#).
 Sigmodus [23](#).
 Simodaetylus [10](#).
 simplex (Criniger) [22](#).
 sinensis (Amadina) [132](#).
 Sitagra [28](#).
 Sitta [13](#).
 siva (Odontolabis) [142](#).
 sobria (Melania) [156](#).
 soembaensis (Cyclotus) [158](#).
 " (Nanina) [147](#).
 solorensis (Helix) [150](#), [151](#).
 . *Spermestes* [29](#).
 spinigera (Paratelphusa) [237](#).
 spinulosa (Randasia) [77](#), [115](#), [117](#).
 Spizaetus [193](#).
 Sporaeginthus [204](#).
 squalidus (Gnaphaloryx) [140](#).
 squamosus (Cyclommatus) [45](#).
 squarrosa (Neritina) [160](#).
 Statira [54](#).
 stellatus (Batrachostomus) [64](#).
 Stenelmis [188](#), [189](#).
 Stenophida [36](#), [37](#), [133](#), [134](#), [135](#).
 Stigmatops [199](#), [200](#), [201](#).
 strangei (Limnaea) [155](#).
 strigiceps (Cyclommatus) [5](#).
 strigillata (Neritina) [160](#).
 stuartiae (Nanina) [148](#).
 subcastaneus (Figulus) [141](#).
 subundulata (Munia) [202](#), [203](#).
 sulcata (Sesarma) [258](#), [260](#).
 " (Stenelmis) [188](#), [189](#).
 sulcatus (Cardanus) [141](#).
 sumbavensis (Geoffroyus) [266](#), [267](#).
 sumbensis (Graucalus) [265](#).
 " (Tanygnathus) [266](#).
 superciliosus (Hyphantornis) [28](#).
 " (Merops) [22](#).
 supracostulata (Helix) [150](#).
 suspectus (Amphidromus) [151](#), [153](#),
 [154](#).
 saturale (Oxyopisthen) [36](#), [133](#), [134](#).

suturalis (Metopodontus) [143](#).
 " (Miolispa) [166](#), [185](#).
 Syarbhis [49](#).
 Sycobius [24](#).
 Sylvia [18](#).
 Symplectes [28](#).
 Syrnum [21](#).
 Syrrhaptos [130](#).

T.

Taeniodera [55](#).
 taeniolata (Sesarma) [257](#).
 Tanygnathus [266](#).
 Taphes [42](#).
 Taphroderinae [184](#).
 tarandus (Cyclommatus) [5](#), [6](#), [141](#).
 " (Lucanus) [6](#).
 tarda (Otis) [130](#).
 tarsalis (Prosopocoelus) [139](#), [191](#).
 Tatare [13](#), [14](#), [16](#).
 taurus (Gnaphaloryx) [6](#), [140](#), [144](#).
 Telephonus [23](#).
 Telphusa [234](#), [235](#), [246](#).
 temmincki (Eutrachelus) [179](#), [185](#).
 tenkatei (Acanthiza) [195](#).
 " (Melania) [156](#).
 " (Rhipidura) [205](#).
 tenuirostris (Numenius) [130](#).
 Terpsiphone [23](#), [198](#), [265](#).
 tetrax (Otis) [130](#).
 Thamnolaea [17](#), [18](#).
 timoriensis (Lalage) [198](#).
 titan (Eurytrachelus) [141](#), [144](#).
 tjindanae (Geoffroyus) [267](#).
 Tockus [29](#).
 topela (Munia) [202](#), [203](#), [204](#).
 torquatus (Astur) [196](#), [265](#).
 " (Nisus) [196](#).
 Trachelizinae [162](#), [184](#).
 Trachelizus [162](#), [185](#).
 Trachyphonus [29](#).
 transversa (Geotelphusa) [225](#), [240](#),
 [241](#), [243](#), [244](#).
 transversa (Telphusa) [240](#), [241](#).
 Treron [29](#).
 Trichalus [40](#), [41](#), [42](#).
 Trichius [56](#).
 tridentata (Heteropanope) [225](#), [228](#),
 [229](#), [231](#), [233](#), [234](#), [264](#).
 tridentatus (Pilumnus) [228](#).
 " (Prophthalmus) [176](#), [185](#).
 trilineata (Stenophida) [36](#), [133](#), [134](#).
 trilobatus (Aegotypus) [143](#).
 Tringa [204](#).
 tristriatus (Cerobates) [162](#), [185](#).

tristis (Cediocera) 181, 183, 185.
 trizonatus (Perissus) 54.
 Tropidorhynchus 194, 199.
 Truncatella 158.
 Trygaeus 61, 62.
 turdoides (Acrocephalus) 23.
 Turdus 130.
 turriculus (Melania) 157.
 turrita (Neritina) 160.
 Turtur 29.
 tympanistria (Peristera) 29.
 typus (Caridina) 262, 263.

U.

Ulomascus 138.
 unicolor (Diurus) 183.
 " (Heteroplites) 183.
 Uroloncha 196.
 uropygialis (Acanthiza) 195.
 ursulus (Onychogymnus) 50.

V.

valdai (Haplorhynchus) 36, 37.
 valida (Truncatella) 158.
 Vanellus 29.
 variegata (Neritina) 160.
 variegatus (Numenius) 204, 265.
 vauquelini (Heteropanope) 233, 234.
 venerata (Gracula) 194.
 veneris (Culcita) 65, 69, 70, 72, 73,
 75, 96, 117, 118.
 venusta (Nanina) 146.

verreauxi (Baza) 20.
 " (Criniger) 22.
 versicolor (Prophthalmus) 176, 185.
 vetulus (Xylobanus) 40, 42.
 Vidua 29.
 virens (Andropadus) 23.
 virgata (Taeniodera) 57, 59, 60.
 viridiaenea (Paratasis) 269, 271.
 vittatum (Oxyopiathen) 33, 34.
 vollenhovii (Eurytrachelus) 140.
 " (Odontolabis) 142.

W.

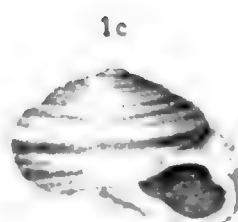
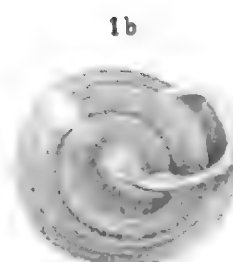
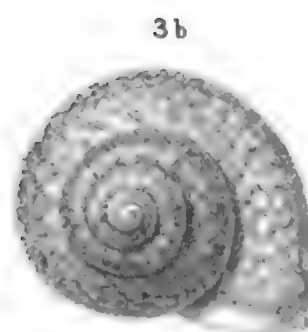
waandersiana (Nanina) 147.
 waterhousei (Lycostomus) 42.
 " (Lycus) 42.
 weberi (Caridina) 261, 262, 263, 264.
 wilhelminae (Dicaeum) 199, 265.

X.

Xantho 225, 226.
 Xenocichla 22.
 x-littera (Perissus) 54.
 Xylobanus 39, 42.

Z.

zebra (Prosopocoelus) 143.
 Zemioses 184.
 Zonopterus 220.
 Zosterops 199.
 zuberi (Cyclommatus) 3, 6.



Dr. H. W. de Graaf del.

A. J. Wendel lith.

P.W.M.Trap impr.

1. *Helix supracostulata* Schepm. 2. *Melania Tenkatei* Schepm.
3. *Cyclotus soembaensis* Schepm.

NOTES
FROM THE
LEYDEN MUSEUM.

NOTES
FROM THE
LEYDEN MUSEUM

FOUNDED BY THE LATE

Prof. H. SCHLEGEL,

CONTINUED BY

Dr. F. A. JENTINK,

Director of the Museum.

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CONTENTS OF VOL. XV.

	Page
Congrès international de Zoologie.	271.

MAMMALIA.

Ueber das Vorkommen der <i>Mellivora indica</i> Kerr im Transcaspi-Gebiet. Von Eug. Büchner	99.
On the dates of Publication of the parts of Sir A. Smith's Illustrations of the Zoology of South Africa. By Dr. F. A. Jentink.	182.
On some Mammals from Cahama. By Dr. F. A. Jentink. (Plates 4, 5 and 6).	262.
On a collection of Bats from the West-Indies. By Dr. F. A. Jentink	278.

AVES.

A review of the genus <i>Rhipidura</i> , with an enumeration of the specimens in the Leyden Museum. By J. Büttikofer.	65.
On <i>Merula javanica</i> and its nearest allies. By J. Büttikofer	107.
A complementary note to my Review of the genus <i>Rhipidura</i> . By J. Büttikofer.	113.
On eggs of some British Guyana Birds. By Dr. C. G. Young.	116.
On two new species of <i>Pachycephala</i> from South Celebes. By J. Büttikofer.	167.
On two new species of the genus <i>Stoparola</i> from Celebes. By J. Büttikofer.	169.
On a new species of the genus <i>Gerygone</i> from Borneo. By J. Büttikofer.	174.
On two new species of Birds from South-Celebes. By J. Büttikofer.	179.
Comparative list of the Birds of Holland and England. By F. E. Blaauw.	183.
On a new species of the genus <i>Gerygone</i> . By J. Büttikofer.	258.
On two new species of Birds from Java and Celebes. By J. Büttikofer.	260.
Notes on the Rails of the Leyden Museum. By Dr. R. Bowdler Sharpe.	266.
Description of a new genus of Crakes. By J. Büttikofer.	274.

REPTILIA.

	Page
On Reptiles from North Borneo. By Dr. Th. W. van Lidth de Jeude. . .	250.
On a new species of the genus <i>Testudo</i> . By Dr. Th. W. van Lidth de Jeude. (Plate 9).	312.

INSECTA.

Descriptions of new species of the Longicorn genus <i>Glenea</i> . By C. Ritsema Cz. (Plate 1).	1.
A new species of the Longicorn genus <i>Pachytaria</i> . By C. Ritsema Cz. . .	13.
Coléoptères nouveaux des Indes orientales, de la famille des <i>Scarabaeidae</i> , <i>Rhipidoceridae</i> , <i>Tenebrionidae</i> et <i>Oedemeridae</i> . Décrits par L. Fairmaire.	27.
Deux espèces nouvelles de Dytiscides du Musée de Leide. Décrites par M. Régimbart	105.
A new <i>Helota</i> from West-Java. Described by C. Ritsema Cz.	111.
Cinq espèces nouvelles d'Élatérides de l'île de Java. Décrites par E. Candèze.	125.
Explanation of plate 2. By C. Ritsema Cz. (Plate 2).	128.
Description d'une nouvelle espèce du genre <i>Stenophida</i> Pasc. Par W. Roelofs.	129.
Five new species of the genus <i>Helota</i> from Sikkim and Darjeeling. Described by C. Ritsema Cz.	131.
Description of a new species of the Cetonid genus <i>Thaumastopeus</i> Kraats. By C. Ritsema Cz.	141.
Description de quatre espèces nouvelles du genre <i>Rhyparus</i> Westw. (<i>Scarabaeidae</i> : <i>Coprini</i>). Par L. Fairmaire	144.
Supplementary list of the described species of the genus <i>Helota</i> . By C. Ritsema Cz.	160.
Espèce nouvelle du genre <i>Necrophorus</i> de l'Archipel Indo-Néerlandais. Décrite par A. Grouvelle	161.
Notice sur le <i>Noctua</i> (<i>Apatela</i> ?) <i>radians</i> Westw. Par P. C. T. Snellen. . .	163.
A new species of the Rutilid genus <i>Spilota</i> . By C. Ritsema Cz.	171.
<i>Chrysobothris rutilicuspis</i> , nova species Buprestidarum. By Dr. K. M. Heller.	177.
Observations sur quelques espèces du genre <i>Oxyopisthen</i> et descriptions d'es- pèces appartenant au même groupe. Par W. Roelofs.	240.
Description du mâle de l' <i>Iphthimorhinus australasiae</i> Roel. Par W. Roelofs.	244.
Observations sur les caractères sexuels du genre <i>Poteriophorus</i> Schh. et des- cription d'une espèce nouvelle. Par W. Roelofs.	246.
On a new species of <i>Apatetica</i> (<i>Staphilinidae</i>). Bij G. Lewis. F. L. S. . . .	248.

CRUSTACEA.

Report of the Podophthalmous Crustacea collected in the year 1891 by Dr. H. ten Kate in some islands of the Malay Archipelago. By Dr. J. G. de Man (Plates 7 and 8)	284.
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MOLLUSCA.

	Page
Two supposed new species of <i>Pentadactylus</i> . Described by M. M. Schepman.	103.
On a collection of Shells from the Moluccas. By M. M. Schepman. (Plate 3).	147.
Description of a new species of <i>Dolium</i> . By M. M. Schepman.	276.

VERMES.

On the habits of <i>Thalassina anomala</i> Herbst. By Dr. R. Horst.	314.
Description of Earthworms. By Dr. R. Horst. VII. On Mayalan Earthworms. (Plate 10).	316.

Vol. XV was issued in parts in the following order:

- Nº 1 — October 1892, Note I—VI.
- Nº 2 — April 1893, Note VII—XXII.
- Nº 3 — July 1893, Note XXIII—XXXVIII.
- Nº 4 — October 1893, Note XXXIX—XLV.

NOTE I.

DESCRIPTIONS OF NEW SPECIES OF THE LONGICORN
GENUS GLENEA

BY

C. RITSEMA Cz.

(Plate 1).

Glenea affinis, n. sp. ♂ and ♀.

Belonging to the group of *Glenea Delia* Thoms., *Clytia* Thoms. and *chalybaea* Illig. (= *picta* Weber and Fabr.) which group is sufficiently characterized by the obsolete shoulders.

The new species is very closely allied to and strongly resembles *Glenea Delia* Thoms. of which I have three type-specimens (from Java) before me, but is at once distinguished by the fulvous posterior tarsi and the similarly colored apex of the posterior tibiae, which in *Delia* are blue-black. Moreover in *affinis* the white stripes are narrower and the white spots smaller than in *Delia* which gives the insect a much darker appearance. Finally the sides of the thorax in *affinis* are more parallel in consequence of the less divergent basal angles.

A male (measuring 19,5 mm.) and a female (measuring 24,5 mm.) from Koetei (Borneo), collected by Carl Bock, in the collection of Mr. René Oberthür.

I think the four above quoted species may easily be identified by the aid of the following key:

SHOULDERS OBSOLETE.

Base of each elytron with two white longitudinal stripes.

Posterior tarsi blue-black; white stripes

broad, the spots large. . . . *Delia* Thoms.

Notes from the Leyden Museum, Vol. XV.

- Posterior tarsi fulvous; white stripes
 narrow, the spots small *affinis* Rits.
 Base of each elytron with one white longitudinal stripe.
 Posterior tarsi blue-black. *chalybaea* Illig.
 Posterior tarsi fulvous. *Clytia* Thoms.¹⁾

Together with Thomson's types of *Glenea Delia* and *Clytia* (species with obsolete shoulders), Mr. René Oberthür forwarded to me the types of some other Thomsonian species which are closely allied to *Glenea elegans* Oliv. and bear a close resemblance to the representatives of the former group as to color and pattern but which have the shoulders more or less strongly prominent. These species are: *corona* Thoms. from the Nicobar islands, *Beatrice* Thoms. from the Philippine islands, *Hygia* Thoms. from Buru²⁾, *Parthenope* Thoms. from New Guinea, and *Venus* Thoms. from Batchian³⁾ and, moreover, an undescribed species from North Celebes (*Glenea celebensis* Rits.).

I have used this opportunity for making the following key to distinguish the above named species:

SHOULDERS PROMINENT: ROUNDED OR ANGULAR.

Shoulders rounded, posterior tarsi blue-black.

Base of each elytron with a white longitudinal stripe which touches the basal margin and is followed by five spots: *corona* Thoms.

1) This species, of which the type-specimen, from Malasia (Malacca), most courteously has been communicated to me by Mr. René Oberthür, is most probably the *Glenea Delia*, from Sarawak, of Pascoe's "*Longicornia Malayana*". Specimens originating from Nias have been distributed by me with the manuscript name of *Glenea Illigeri* Rits. The species occurs also in West-Sumatra (Siboga and Padang Sidempoean).

2) Moreover known from New Guinea (Amberbaki, Mansinam, Andai and Doreh).

3) Moreover known from Halmahera, Ternate, Morotai, Waigeou, Kajoa, Makian and New Guinea (Amberbaki).

Base of each elytron with a white spot which does not touch the basal margin and is followed by five spots: ∴.

The white lines on the face abbreviated and nearly parallel, no white stripes on the occiput, the central vitta on the pronotum widely interrupted in the middle. *Beatrice* Thoms.

The white lines on the face continuous and convergent, four white stripes on the occiput, the central vitta on the pronotum entire. *elegans* Oliv. ¹⁾

Shoulders angular, base of each elytron with a white spot which does not touch the basal margin; posterior tarsi blue-black or fulvous.

Posterior tarsi blue-black.

The three white vittae on the pronotum broad, subcontiguous at the base, four white stripes on the occiput *celebensis* Rits.

The three white vittae on the pronotum narrow, the central one often interrupted in the middle, the broader lateral ones irregular; only two white stripes on the middle of the occiput. *Hygia* Thoms. ♀.
(= *Parthenope* Thoms. ♂).

Posterior tarsi fulvous; (the shoulders strongly angular) *Venus* Thoms.

Glenea celebensis, n. sp. ♂ and ♀.

Length of a male specimen 20 mm., breadth at the shoulders 5 mm.; length of the female (four examples) 25—26,5 mm., breadth at the shoulders 7—7,5 mm.

1) Known from Amboyna, Baru, Batchian and Ceram.

This species strongly resembles *Glenia elegans* Oliv. (= *picta* Pascoe ¹⁾ nec Weber and Fabricius) and *Venus* Thoms., and is intermediate between them on account of the shape of its shoulders, these being not so broadly rounded as in *elegans* nor so acutely prominent as in *Venus*. It differs moreover from the latter by its dark colored (not fulvous) posterior tarsi and from both by the broadness of the three white vittae on the pronotum, which are almost contiguous at the basal margin.

The head agrees with that of *elegans* and *Venus* in having two convergent white lines which are widely separated at their origin (the base of the clypeus) but closely approximated and nearly parallel between the upper lobes of the eyes and on the vertex, a lateral stripe behind the insertion of the antennae, and a transverse broader stripe at some distance from the base of the mandibles. A few large and deep punctures are present on the face and on the vertex. The three basal joints of the antennae are dark steel-blue and nitid, the remainder dull black.

The prothorax is subcylindrical, being slightly narrowed in straight lines towards the front margin; the three white vittae on the disk are considerably broader than in the two allied species and widen out at the base so as to become here subcontiguous; the stripe immediately above the anterior and middle coxae is likewise conspicuously broader. The scutellum is somewhat elongate triangular with curvilinear sides and rounded apex; it is entirely covered with a dense white pubescence.

The elytra are at the base much broader than the thorax; the shoulders are angular (though not so acutely as in *Venus*) and strongly directed backwards; the white markings agree in number and disposition with those of *Venus* and *elegans* (see Pascoe's figure of the presumed *Glenia picta* of Fabricius, in „*Longicornia Malayana*” l. c.), and the punctuation and truncation of the elytra is likewise similar.

1) *Longicornia Malayana*, p. 373; pl. 17, fig. 6.

The sides of the metasternum and the posterior half of the ventral segments are densely covered with a white pubescence which is, however, interrupted along the middle of the abdomen ¹⁾. The legs are steel-blue and covered with a greyish pile.

Hab. North Celebes. — A female specimen from Gorontalo (von Rosenberg) in the Leyden Museum, and three females and a male, all from Menado, in the collection of Mr. René Oberthür.

Glenea bisbiguttata, n. sp. ♀.

(Plate 1, fig. 1).

Length 24 mm., breadth at the shoulders 7 mm. — Dark steel-blue, covered with a black velvety pubescence and provided with markings of short white hairs.

The head is provided on the face with two white stripes, bordering the inner orbits and joining the base of the clypeus; moreover with a transverse white stripe at the sides of the head a little above the base of the mandibles and with four white stripes on the vertex: two approximate ones in the middle, joining the orbital stripes in front of the antennary tubers and reaching to the front margin of the prothorax, and two laterally behind the insertion of the antennae. The basal joints of the antennae are greenish blue and subnitid, the remainder dull black. On the face some large and deeply impressed punctures are present.

The prothorax is much narrower than the base of the elytra, subcylindrical, being almost inconspicuously narrowed in straight lines towards the front margin; the disk is provided with a white stripe along the middle and with another somewhat broader and slightly curved one laterally; moreover a white vitta is present immediately above

1) In the female specimen from Gorontalo (Leyden Museum) the white lateral stripes of the ventral segments are subinterrupted in the middle.

the anterior and middle coxae. The scutellum is elongate triangular, narrowly notched at the tip and covered (the lateral margins excepted) with a dense white pubescence.

The elytra, which are much broader at the base than the thorax, are constricted in a rather strongly curved line behind the shoulders which are prominent, rounded and directed backwards; the apices are broadly and somewhat obliquely emarginate and provided with four spines: the external ones stout, the sutural ones small; the disk of the elytra is covered with large and deep punctures which are however absent from the apical portion; on the deflexed lateral portions the punctures are arranged in two regular rows which are separated by the smooth keel. Each elytron is provided with the following white markings: a very small longitudinal spot at the base, midway between the scutellum and the shoulder, an ante-apical transverse spot, two contiguous ovate spots on the middle of the basal half, of which the outermost touches the bordering keel of the deflexed portion, and a little behind the middle of the length two similar spots which are approximate but not contiguous, and of which the innermost (approaching the suture and being somewhat oblique) is placed nearer to the middle of the length than the outermost which touches the bordering keel.

The sides of the metasternum and of the abdomen have spots of a dense white pubescence. The legs are steel-blue and covered with a greyish pile.

Hab. New Guinea: Island of Misore. — A single female specimen in the collection of Mr. René Oberthür.

Glenea nivea, n. sp. ♀.

(Plate 1, fig. 2).

Length 25 mm., breadth at the shoulders 6,5 mm. — Easily recognizable by its being almost entirely covered with a dense whitish pubescence. — Metallic blue, with a strong purplish gloss on the elytra.

Notes from the Leyden Museum, Vol. XV.

The head is provided on the face with two white stripes bordering the inner orbits and joining the base of the clypeus, moreover with a transverse white stripe at the sides of the head a little above the base of the mandibles, and with four white stripes on the vertex: two in the middle, closely approximate, beginning in front of the antennary-tubers and reaching to the front margin of the prothorax, and two laterally, beyond the insertion of the antennae; the mandibles are covered on the outside with a white pubescence. The three basal joints of the antennae are bluish black and nitid, the remaining joints dull black. The face and the vertex have a few large and deep punctures.

The prothorax is slightly shorter than broad at the base, subcylindrical, the basal angles being but faintly divergent; a fine raised line runs along the middle of the disk; the pronotum is covered with a dense white pubescence, with the exception of two approximate elongate ovate slightly divergent basal spots whereupon a black pubescence occurs. The sides are smooth and glossy, impunctate, and immediately above the anterior and intermediate coxae a broad band of a dense white pubescence is present. The scutellum is triangular, with curvilinear sides and rounded tip, and entirely covered with a very dense white pubescence.

The elytra, which are much broader at the base than the thorax, are narrowing in faintly curved lines behind the shoulders which are slightly prominent with rounded angles; the apices are broadly and somewhat obliquely emarginate and provided with four spines: the external ones stout, the sutural ones small. The elytra are densely covered with a white pubescence which, however, leaves free a longitudinal humeral streak, a transverse streak immediately before the apical emargination of which the margin is fringed with white hairs, and the keels and outer margin of the deflexed lateral portions of the elytra. The punctuation with which the elytra are covered is partly concealed by the pubescence.

The sides of the metasternum and the posterior half of the ventral segments are covered with a dense white pubescence, which is, however, interrupted along the middle of the abdomen. The legs are steel-blue with green tinges especially on the forelegs; they are covered with a greyish pile.

Hab. New Guinea: Mount Arfak. — A single female specimen in the collection of Mr. René Oberthür.

Glenea similis, n. sp. ♂.

(Plate 1, fig. 3).

Length 19,5 mm., breadth at the shoulders 5,25 mm. — Strongly resembling the Javanese *Glenea Delia* Thoms. and agreeing with it as to color and markings, but the white stripes broader and the spots larger. It is however at once distinguished by its strongly prominent shoulders which are obsolete in *Delia*.

The color of the derm is steel-blue with faint green tinges on the legs. The head is covered all over with a white pubescence, with the exception of a bare spot beyond the middle of the eyes, and of two stripes and a mesial line on the vertex. The face and vertex are sparingly punctured. The three basal joints of the antennae are dark steel-blue and subnitid, the remainder dull black.

The prothorax is subcylindrical, its basal angles being but slightly divergent. The disk is sparingly punctured and provided with three broad white vittae of which the lateral ones widen out towards the anterior and basal margins which makes them narrower in the middle; these vittae are united by a white pubescence along the front margin, whereas they are subcontiguous at the base; the central vitta shows a fine raised line along the middle; immediately above the anterior and middle coxae a broad white vitta is present. The scutellum is somewhat elongate triangular with curvilinear sides and rounded tip; it is covered all over with a dense white pubescence.

Notes from the Leyden Museum, Vol. XV.

The elytra, which are much broader at the base than the thorax, are constricted in a curved line behind the shoulders which are prominent and strongly directed backwards; the apices are broadly truncated in a very oblique direction and provided with four spines: the external ones stout, the sutural ones small; the disk of the elytra is covered with large and deep punctures which disappear however towards the end; on the deflexed lateral portions the punctures are arranged in two rows, which are separated by the smooth keel. Each elytron is provided with the following white markings: a small spot at the extreme base just below the shoulder, two basal longitudinal stripes of which the innermost only touches the basal margin, a round spot quite at the middle of the length and placed closer to the suture than to the lateral keel; just behind this spot two elongate ovate smaller spots, one (the smallest) touching the suture and placed somewhat more backwards, the other (the largest) touching the lateral keel, and, posteriorly, a transverse oblique ante-apical spot, whereas finally a white pubescence is present along the suture and in the upper furrow of the deflexed portion.

The under surface is covered with a dense white pubescence, the legs with a thin greyish pile.

Hab. New Guinea: Island of Misore. — A single male specimen in the collection of Mr. René Oberthür.

Glenea Hasselti, n. sp. ♂ and ♀.

(Plate 1, fig. 4) ¹⁾.

Length of the female 21,5—27 mm., breadth at the shoulders 6,25—8 mm.; length of the male 20—22 mm., breadth at the shoulders 6—6,5 mm.

Closely allied to *Glenea Juno* Thoms. of which I have

1) Fig. 5 represents *Glenea florensis* Rits. ♀, from Flores (Notes Leyd. Mus. XIV, 1892, p. 221).

Fig. 6 represents *Glenea Oberthüri* Rits. ♀, from East Java (Notes Leyd. Mus. XIV, 1892, p. 222).

two type-specimens from the collection of Mr. René Oberthür before me, and agreeing with it in form and in the disposition and shape of the pattern, but at once distinguished by the orange-brown color of the hairy spots on the thorax and elytra, which spots are chalky white in *Glenea Juno*.

Dark violet-blue. The face with two white lines beginning at the base of the clypeus, bordering the inner orbits and disappearing in the emargination of the eyes; moreover a transverse white stripe is present at the sides of the head a little above the base of the mandibles. The head is covered with large and deep punctures on the face between the white lines and on the vertex, which latter is dull black with two slightly divergent smooth lines; beneath and behind the eyes the head is glossy and impunctate. The three basal joints of the antennae are glossy dark blue, the remainder joints dull black in consequence of the covering pile.

The pronotum is provided on each side of the base with a broad triangular spot of orange-brown hairs, which spots are nearly contiguous in front of the scutellum; in fresh specimens these spots are narrowly prolonged to the front margin of the thorax and even continued on the head; a stripe of whitish hairs is present just above the anterior coxae. The prothorax is somewhat longer than broad, subcylindrical, slightly narrowing in straight lines from the bisinuate base to the straight front margin; the disk is irregularly covered with large and deep punctures, which leave however a raised line along the middle free; the sides are smooth, nearly impunctate. The scutellum is elongate triangular with narrowly rounded tip, broadly impressed along the middle and provided on the tip with a white pubescence.

The elytra are provided on the middle with a cross-shaped figure of orange-brown hairs, which figure is common to both elytra and divided by the suture; the longitudinal stripe is narrow, the transverse one broad, and the entire figure is broadly surrounded with a black velvety pubes-

cence; just before the middle of the apical half of each elytron a small round orange-brown spot is present, touching the lateral carina and situated in a longitudinal impression which is filled with a black velvety pubescence; at some distance before the apex an oblique spot of a white pubescence may be observed and the truncation of the elytra is bordered with white¹). The elytra, which are much broader at the base than the thorax, are slightly constricted in a curved line just behind the shoulders which makes the latter somewhat acutely prominent; the anterior margin of the shoulders is straight and obliquely directed backwards; the apices of the elytra are broadly and somewhat obliquely emarginate and provided with four spines: the external ones stout, the sutural ones small. The disk of the elytra is densely covered with very large and deep punctures which disappear however posteriorly. On the deflexed sides the punctures are arranged in two regular rows which are separated by the smooth keel.

The episterna have a pale orange-brown pubescence, and the ventral segments are bordered with white posteriorly. The legs are glabrous, the tarsi thinly covered with a greyish pile.

The male differs from the female sex, from which the above description is derived, besides by the sexual characters of the abdomen and the smaller size and narrower shape, by the want of the triangular orange-brown basal spots on the pronotum.

Hab. The island of Nias and West-Sumatra. — A few specimens originating from the first quoted locality have been presented to the Leyden Museum by Messrs. A. L. van Hasselt and J. D. Pasteur, whereas I have seen specimens from Mr. René Oberthür's collection which are said to come from West-Sumatra.

1) The two small pubescent spots which in *Glenea Juno* are present on the middle of the basal half of each elytron are wanting in *Hasselti*.

SYNONYMICAL REMARKS.

1. *Glenea chalybaea* Illig. 1800 = *picta* Weber and Fabr. 1801.
2. „ *Clytia* Thoms. 1879 = *Delia* Pasc. 1867 (nec Thoms. 1860).
3. *Glenea elegans* Oliv. 1795 = *picta* Pasc. part. 1867¹⁾ (nec Weber and Fabr. 1801).
4. „ *Hygia* Thoms. ♀, 1879 = *Parthenope* Thoms. ♂, 1879.
5. „ *Thetis* Thoms. 1879 = *rufipes* Lansb. M.S. (The latter is a variety, likewise from Borneo, with partly red colored legs).
6. „ *voluptuosa* Thoms. ♀, 1860 = *Cybele* Thoms. ♂, 1865. (Of this species the Leyden Museum possesses a. o. a male specimen of a variety with partly red colored legs, originating from East Sumatra (Serdang) and presented by Dr. B. Hagen).
7. „ *Diana* Thoms. 1865 = *bimaculiceps* Gahan, 1889, as is noticed by Mr. Gahan himself on a label attached to Thomson's type-specimen.

Leyden Museum, June 1892.

1) Judging from the localities mentioned by Pascoe (*Longicornia Malayana*, pp. 373—375) I believe his *Glenea picta*, *elegans* and *nympha* to be composed of *Glenea elegans* Oliv., *celebensis* Rits., *Hygia* Thoms. and *nympha* Thoms. — As nothing is said by him of *fulvous posterior tarsi* it seems that *Glenea Venus* Thoms. was not represented amongst Mr. Pascoe's specimens.

NOTE II.

A NEW SPECIES OF THE LONGICORN GENUS
PACHYTERIA

DESCRIBED BY

C. RITSEMA Cz.

In the collection of Coleoptera, left behind by the late H. W. Bates and now in the possession of Mr. René Oberthür, the following species of *Pachyteria* were represented: *calumniata* Rits. (= *fasciata* Thoms. nec Fabr.), *ruficollis* Waterh. (= *collaris* Har.), *javana* Bates (= *puncticollis* Rits.), *affinis* Rits., *Pryeri* Rits. and, finally, an undescribed species from Borneo, which will be described in this Note.

The specimen of *Pachyteria Pryeri* Rits., a female originating, like the type-specimen, from North Borneo ¹⁾, was labelled „*basalis* Waterh.“, but this species belongs, according to the description of the apical ventral segments, to the group of *Pachyteria rugosicollis* Rits., *Hageni* Rits. and *similis* Rits. ²⁾, having in the

♂: the 5th ventral segment broadly emarginate, the 6th very deeply emarginate, the sides of the emargination parallel, — and in the

♀: the 5th ventral segment notched on each side.

In Mr. Bates' specimen, which, as is said, belongs to

1) See: Notes from the Leyden Museum, X (1888), p. 183.

2) Most probably also *speciosa* Pasc. (Proc. Zool. Soc. London, 1866, p. 519; pl. 43, fig. 5).

the female sex, the hind margin of the 5th ventral segment is, however, faintly and broadly emarginate.

The new species from Borneo, alluded to above and which I propose to call

Pachyteria Batesi,

is represented by a single female specimen and belongs to the group of *basalis* Waterh. (= *polychroma* Har.), *rugosicollis* Rits. etc. It strongly resembles *Pachyteria Hageni* Rits. from East Sumatra, but is at once distinguished from that species by its narrower shape and more slender antennae, whereas moreover a slight difference exists in the distribution of the colors on the antennae.

Length from the front margin of the inter-antennary ridge to the apex of the elytra 27 mm.; length of the elytra 20 mm., breadth at the shoulders 8 mm.; breadth across the thorax from point to point of the lateral tubercles 6 mm.

Nearly glabrous. Head dark bronze green, with an ill-defined red spot on the middle of the face and on the vertex, the sides of the labrum brown, the mandibles black; the face and inter-antennary ridge, as well as the under surface, covered with a minute pale pubescence. The four basal joints of the antennae and the base of the 5th on the inside black, the 4th joint however with a yellowish spot at the tip on the outside, the remainder part of the 5th joint and the 6th—11th joints yellow, the 3rd and 4th joints are covered with a black velvety pubescence. The prothorax dull red, the middle portion of the underside, which is covered with a pale pubescence, greenish black. The scutellum covered with a black pubescence except on the dark brown tip. The basal half of the elytra pale yellowish, the rest dark bronze green; the line of demarkation between these two colors is slightly curved backwards. Body beneath greenish black, the legs black with the exception of the posterior tibiae which are dark

Notes from the Leyden Museum, Vol. XV.

brown along the middle, whereas moreover the anterior femora have a reddish brown stripe on their under surface near the base; the inner margin of the anterior tibiae is clothed with a luteous pubescence, which is also the case in *Hageni*.

Head coarsely punctured on the vertex and behind the eyes, finely on the cheeks and base of mandibles, very densely on the face and inter-antennary ridge. The frontal groove is deep and extends from between the upper lobes of the eyes down to the base of the clypeus which is indicated by a well-defined transverse groove; the clypeus itself is flat and provided at its base with a few indistinct transverse wrinkles and along its middle with an impressed line. The antennae are considerably more slender and elongate than in *Hageni*; the scape is short, rugose and provided with a smooth keel along the frontside; the 3rd joint is nearly as long as the two following joints taken together, the 4th a little shorter than the 5th, this and the two following equal in size, the 8th—10th slightly decreasing, the apical one distinctly longer.

Prothorax slightly longer than broad at the base, the sides provided with a small tubercle, the anterior and posterior margin strongly turned upwards; transversely wrinkled on the upper surface and sides; on the disk these wrinkles are irregularly confluent, so as to form small smooth spaces; the intervals are provided with large punctures. The scutellum is somewhat elongate triangular, with slightly convex sides, the tip is smooth.

The elytra taper gradually towards the end, the apices are obliquely truncate with rounded angles; each elytron with two faint longitudinal lines on the yellow portion which is less strongly punctured as in *Hageni*; the green posterior portion finely and very densely punctured on the outer half, so as to make it here opaque, much more distantly punctured and shining along the suture; the opaque streak densely covered with a short black pubescence.

Notes from the Leyden Museum, Vol. XV.

The under surface of the prothorax is finely wrinkled in a transverse direction, and covered like the head behind the mouth and the mesosternum with a pale pubescence; the middle of the metasternum is glabrous and provided with a few punctures and a fine raised longitudinal line; the sides have a black pubescence in the middle, a greyish one on the front- and hindmargin. The abdominal segments are sparingly punctured and provided on each side with a transverse spot of a dense greyish pile, the 5th segment notched on each side behind.

The intercoxal part of the pro- and mesosternum formed as in the majority of the species (no tubercle with V-shaped recess).

The middle and hind femora are rugosely punctured, the anterior femora very finely.

Hab. Borneo. — A single female specimen in the collection of Mr. René Oberthür.

CORRECTION. The type-specimen of *Pachyteria Pasteuri* Rits. from Nias is not a male, as is erroneously indicated on page 213 of Vol. XIV of the »Notes'', but a female.

Leyden Museum, June 1892.

NOTE III.

COLÉOPTÈRES NOUVEAUX
DES INDES ORIENTALES, DE LA FAMILLE DES
SCARABAEIDAE, RHIPIDOCERIDAE, TENEBRIONIDAE
ET OEDEMERIDAE

DÉCRITS PAR

L. FAIRMAIRE.

Scarabaeidae.*Rhyparus sumatrensis*, n. sp.

Long. 7 mill. — *R. Desjardinsii* valde similis, sed multo major et prothorace medio elytris haud angustiore; capite brevi, fere truncato, fronte breviter quadriplicato, genis ampliatis; prothorace lateribus antice fortius emarginato, dorso medio carinis duabus integris parallelis, utrinque carina post medium interrupta et carina externa integra, angulis posticis valde obtusis; elytris post medium angustatis, apice truncatulis, sutura paulo elevata, utrinque costis 3, prima magis elevata, apice bituberosa, intervallis biserialim granuloso-punctatis; pedibus sat gracilibus, tibiis prismaticis, 4 posticis intus basi leviter sinuatis.

Hab. Sumatra. — Ma collection.

Une nouvelle espèce du genre *Rhyparus* est un fait d'autant plus intéressant qu'elle provient de Sumatra, tandis que le type est de l'île Bourbon, où notre collègue, feu Coquerel, a trouvé deux exemplaires dans la plaine des Cafres. Notre nouvelle espèce diffère de ce type, outre la taille bien plus

Notes from the Leyden Museum, Vol. XV.

forte, par la sculpture de la tête, par le corselet ayant au milieu deux carènes parallèles et par les élytres dont les carènes sont droites et égales.

Rhipidoceridae.

Homoeorhipis bicolor, n. sp.

Long. 12 mill. — Rufo-aurantiaca, vix nitidula, elytris nigris, nitidis, vage coerulescentibus, capite nigro, summo, clypeo et ore exceptis, antennis pedibusque nigris, femoribus exceptis, unguibus rufo-piceis; capite dense sat subtiliter rugoso, summo medio obsolete foveolato, inter oculos transversim impresso, antennis opacis, articulo 1° nitidulo, rugosulo, medium corporis attingentibus, articulis elongatis, sat breviter flabellatis, flabellis æqualibus, articulis vix duplo longioribus; prothorace basi elytris haud angustiore, a basi antice attenuato, lateribus fere rectis, dorso antice valde convexo, sat subtiliter dense rugoso-punctato, antice medio obsoletissime sulcatulo, postice utrinque sat profunde impresso, margine postico utrinque sinuato, medio fere lobato-truncato et levissime incrassato, angulis posticis subacutis; scutello fere rotundato, depresso, aurantiaco; elytris sat elongatis, apice obtuse rotundatis, sutura et utrinque costis 4 elevatis, basi depressiusculis, intervallis punctis grossis transversis dense biseriatis, costis 2 et 3 ante apicem conjunctis; subtus dense subtiliter rugosulo-punctulata, fulvo-pubescens, tibiis rugosis, 4 primis extus subtiliter denticulatis, fusco-setosulis.

Hab. Ins. Nias (J. D. Pasteur). — Un seul exemplaire ♂ du Musée de Leide.

Diffère de l'*H. mesomelaena* par la coloration des pattes et des élytres, par ces dernières ayant de fortes côtes saillantes, par le corselet n'ayant qu'une impression de chaque côté, sans sillon médian, le bord postérieur tronqué au milieu et par les antennes à flabelles courtes.

Simianus cribripennis, n. sp.

Long. 13 mill. — Elongatus, sat convexus, rufo-casta-

Notes from the Leyden Museum, Vol. XV.

nescens, vix nitidulus, fulvido-pubescens; capite rufo, sat parvo, dense subtiliter punctato-rugosulo, medio oblonge impresso, oculis valde distantibus, subglobosis, subtiliter granulatis, antennis piceis, articulo 1° rufo, gracilibus, flabellis elongatis, medium elytrorum vix superantibus; prothorace fere trapeziformi, elytris haud angustiore, antice leviter attenuato, lateribus fere rectis, ad angulos anticos tantum breviter rotundatis, dorso æquali, convexo, subtiliter dense punctato, utrinque postice obsolete biimpresso, margine postico fere recto, angulis acutiusculis; scutello fere rotundato; elytris elongatis, dense seriato-punctatis, punctis subquadratis, ocellatis, intervallis transversis plicatulis, sutura et intervallis 3, 5, 7 levissime elevatis; prosterno ad marginem anticum acute bispinoso, abdomine paulo dilutius, densissime punctulato.

Hab. Bornéo (S. Müller). — Un seul exemplaire ♂ du Musée de Leide.

Distinct de ses congénères par sa coloration uniforme d'un marron roussâtre avec la tête rousse et par ses élytres obtusément arrondies à l'extrémité, couvertes de gros points serrés en séries, sans côtes un peu saillantes; les fémurs ne sont pas pubescents.

Tenebrionidae.

Bradymerus grandis, n. sp.

Long. 10 mill. — Oblongus, sat fortiter convexus, sed dorso planiusculus, fuscus, nitidus, fere metallescens; capite dense rugosulo-punctato, sutura clypeali parum impressa, margine antico obsolete sinuato, antennis piceo-rufis, gracilibus, apice paulo clavatis; prothorace valde transverso, elytris angustiore, antice et basi fere æquilato, lateribus rotundatis, basi tantum sinuatis, margine postico medio rotundatim lobato, utrinque sat fortiter sinuato, angulis posticis sat acutis, dorso dense ac fortiter asperato, basi sat fortiter marginato et læviore, angulis anticis sat productis; scutello minuto, triangulari; elytris ovatis, basi

Notes from the Leyden Museum, Vol. XV.

truncatis, apice obtusis, cum sutura fortiter et acute carinatis, carina præscutellari brevissima, interstitiis concavis, clathrato-foveolatis, subtus parce punctulatus, abdomine strigoso-punctato, pedibus dense rugosis.

Hab. Java orient.: Bezoeki (Semmeling et Groen). — Deux exemplaires du Musée de Leide.

Ressemble assez au *B. granaticollis* Fairm., mais un peu plus grand, le corselet n'est pas crénelé sur les côtés, les angles antérieurs sont moins saillants, les carènes des élytres sont bien plus tranchantes, entières, et les interstices, bien plus larges, sont remplis par des fossettes peu profondes, séparées par des plis transversaux; la carène préscutellaire est courte mais bien marquée.

Bradymerus granulipennis, n. sp.

Long. 7 mill. — Oblongus, sat convexus, fuscus, indumento terreno vestitus; capite sat lato, brevi, genis angulatim dilatatis, sat dense granulato, clypeo utrinque foveato, antennis brevibus, articulis 3 ultimis dilatatis, brevibus; prothorace elytris vix angustiore, valde transverso, subquadrato, antice haud angustiore, lateribus vix arcuatis, dorso dense asperato-granuloso, margine postico leviter bisinuato, angulis omnibus fere rectis; scutello sat lato, obtuso; elytris ad humeros sat rotundatis, apice obtuso, striatulis, intervallis seriatim parum regulariter tuberculatis, alternatim paulo convexiusculis; subtus nitidior, asperulo-punctulatus, pedibus sat brevibus, femoribus crassiusculis.

Hab. Bornéo occ.: Sambas (Dr. J. Bosscha). — Un seul exemplaire du Musée de Leide.

La granulation assez fine et assez serrée des élytres fera reconnaître facilement cette espèce. L'unique individu est recouvert d'un enduit terreux qui disparaîtrait peut-être par un lavage malheureusement dangereux pour l'état de conservation de l'insecte.

Bradymerus aequicostatus, n. sp.

Long. 6 à 8 mill. — Oblongus, modice convexus, piceo-

Notes from the Leyden Museum, Vol. XV.

fuscus, parum nitidus, subtus cum pedibus, antennis et ore piceo-rufescens; capite planato, dense subtiliter asperulopunctato, antice fere truncato, antennis basin prothoracis haud attingentibus, articulis 6 ultimis latioribus; prothorace valde transverso, elytris vix angustiore, antice vix angustato, lateribus parum arcuatis, integris aut obsoletissime undulatis, dorso sat subtiliter dense punctato-granulato, lateribus paulo marginato, angulis anticis productis, apice obtusis, posticis acute rectis; scutello subcordato, apice acutiusculo, punctulato; elytris ad humeros valde angulatis, apice obtusis, substriato-punctatis, intervallis costulatis, costulis æqualiter elevatis, 1^a 2^aque usque post medium planiusculis; subtus dense punctatus, pedibus mediocribus.

Hab. Bornéo: Moeara teweh (J. Semmeliuk), Sambas (J. Bosscha). — Quelques exemplaires du Musée de Leide.

Ressemble assez au *B. sublaevicollis* Fairm., des îles Viti, pour la forme générale et la sculpture des élytres, mais la sculpture du corselet est bien différente, les 6 derniers articles des antennes sont plus larges, les côtes des élytres sont plus nettes, plus saillantes, plus égales, et les stries sont plus fortement et plus également ponctuées.

Ceropria bifoveata, n. sp.

Long. 12 mill. — Ovato-elliptica, parum convexa, valde nitida, viridi-æneo-cœrulescens, prothorace maculatim purpureo micante, elytris æneo-cœrulescenti et purpureo fere tessellatis; capite sat brevi, fere indistincte punctulato, oculis antice valde approximatis, extus fere angulatim convexis, antennis fuscis, opacis, dense punctatis, valde serratis, basin prothoracis superantibus, articulo 2^o brevi, 3^o angusto, ceteris sat late triangularibus; prothorace elytrorum basi vix angustiore, longitudine duplo latiore, antice rotundatim angustato, dorso subtiliter dense punctulato, basi utrinque foveato, margine postico utrinque late sinuato, angulis posticis rectis; scutello triangulari, impressiusculo; elytris sat amplis, ovatis, striatis, striis dense

Notes from the Leyden Museum, Vol. XV.

sat subtiliter punctatis, apice paulo profundioribus, intervallis vix convexiusculis; subtus fusca, vage cœrulescens, sat nitida, lævis, abdomine subtilissime striolato, tibiis anterioribus leviter arcuatis et tarsis articulis 4 primis sat dilatatis.

Hab. Bornéo (Schwaner). — Un seul exemplaire du Musée de Leide.

Ressemble à la *C. induta*, mais plus grande, plus ample, avec les couleurs plus disposées en damier, les yeux plus saillants, le corselet ayant à la base 2 fossettes bien marquées, les stries des élytres plus finement ponctuées et les tibias antérieurs légèrement arqués.

Ceropria rufofasciata, n. sp.

Long. 10 mill. — Ovata, modice convexa, nigro-fusca, nitida, elytris utrinque fasciis 2 rufis ornatis, suturam haud attingentibus, 1^a ante medium transversa, valde dentata, 2^a fere apicali, paulo obliqua; capite subtiliter punctulato, inter oculos impresso, antice transversim sulcatulo et utrinque impresso, oculis valde transversis, antice approximatis, antennis elongatis, fuscis, opacis, apicem versus paulo latioribus, articulis 6—10 fere triangularibus, 9^o et 10^o latioribus et brevioribus; prothorace elytris haud angustiore, longitudine duplo latiore, antice angustato, lateribus sat rotundatis, dorso subtiliter sat dense punctato, basi biimpresso et medio rotundatim paulo lobato; scutello valde obtuso; elytris ovatis, basi truncatis, subtiliter substriato-punctatis, intervallis planis, subtilissime sat dense punctulatis; subtus cum pedibus fuscus, nitidus, vage ænes-cens, abdomine lateribus, medio obsolete striolato, prosterno apice compresso, acuto, mesosterno antice acute excavato.

Hab. Bornéo (S. Müller). — Un seul exemplaire du Musée de Leide.

Ressemble beaucoup à la *Ceropria bifasciata* Chevr., de Bombay, mais cette dernière est bien plus oblongue, plus parallèle, avec le corselet moins court, moins impressionné

à la base, les élytres bien plus fortement striées-punctuées, à intervalles moins plans, à bande antérieure, traversant les élytres, à peine dentée, et les antennes plus courtes, à articles 4—10 transversaux.

Holamara picescens Fairm.

(Ann. Soc. Ent. Belg. 1885, C. R. p. cix).

Cet insecte, que j'ai décrit d'après des individus récoltés à Sumatra, se trouve à Java, à Bornéo et aussi en Chine, dans le Tokien. Il doit reprendre le nom de *lateralis*, sous lequel il a été décrit par Boheman, comme *Heterophaga*, dans le voyage de la frégate Eugénie.

Uloma compacta, n. sp.

Long. 9 mill. — Oblongo-ovata, modice convexa, fusco-picea, nitida; capite antice rufescente, subtilissime punctulato, vertice dense punctato, inter oculos transversim sulcato, antice transversim impresso, margine antico incrassato; antennis rufo-piceis, brevibus, latis, articulis 5—10 transversis; prothorace transverso, sat amplo, elytris fere latiore, antice angustato, lateribus a medio arcuatis, dorso subtilissime sat dense punctato, antice haud impresso, margine postico fere recto, angulis posticis fere rectis, anticis fere rotundatis; scutello ogivali, lævi; elytris ovatis, basi truncatis, sat fortiter striatis, striis subtiliter fere obsolete punctatis, intervallis convexis, lævibus, apice magis elevatis; prosterno dense rugoso-punctato, medio lævi, carinato, metasterno lateribus tantum punctato, abdomine lateribus striolato, pedibus rufis, tibiis apice rugosis, anticis fortiter, intermediis minus et posticis vix dentatis.

Hab. Bornéo occ.: Sumbas (Dr. J. Bosscha). — Deux exemplaires du Musée de Leide.

Ressemble assez à l'*U. rufilabris*, de Sumatra, mais bien plus grande, avec le corselet plus ample, rétréci seulement en avant du milieu et les intervalles des élytres un peu plus convexes; le corps est aussi plus convexe et les pattes sont presque lisses sauf l'extrémité des tibias.

Notes from the Leyden Museum, Vol. XV.

Uloma haemorrhoea, n. sp.

Long. 7 mill. — Oblonga, subparallela, fusca, nitida, sat convexa, elytris apice sanguineo terminatis; capite sat dense punctulato, inter oculos transversim et antice arcuatim impresso, ore et antennis castaneo-rufis, his validis, apicem versus latioribus; prothorace transversim subquadrato, lateribus parallelis, antice tantum rotundatis, dorso dense parum subtiliter punctato; scutello brevi, obtuso; elytris apice obtuse rotundatis, parum profunde punctato-striatis, intervallis convexiusculis, subtiliter sat dense punctulatis; subtus cum epipleuris et pedibus piceo-rufa, dense sat fortiter punctata, tibiis interdum obscurioribus, subtiliter denticulatis.

Hab. Bornéo: Sintang. — Quatre exemplaires du Musée de Leide, présentés par M. G. Severin.

Ressemble extrêmement à l'*U. picicornis*, n'en diffère, outre la coloration de l'extrémité des élytres, que par la tête moins impressionnée, les antennes plus longues, n'ayant que les 5 derniers articles élargis et bien moins courts, le 3^e article bien plus long que le suivant au lieu d'être égal, et les tibias plus finement denticulés. Je n'ai vu que des ♀; le corselet est peut-être impressionné en avant chez les ♂.

Uloma truncata, n. sp.

Long. 10 mill. — Oblonga, parallela, convexa, picea, nitida; capite subtilissime punctato, transversim concavo et impresso, margine antico incrassato, fronte inermi, antennis latis, compressis, articulis 5—10 brevibus, transversis, ultimo fere truncato; prothorace transversim subquadrato, antice parum attenuato, dorso subtiliter sat dense punctulato, antice late truncato, angulis anticis rotundatis; scutello obtuso, lævi; elytris apice rotundatis, sat fortiter striatis, striis parum fortiter punctatis, punctis apice obsoletis, intervallis convexiusculis, subtiliter alutaceis et fere inconspicue punctulatis; subtus cum elytrorum margine angusto, pedibus et ore rufo-castanea, dense punctata,

Notes from the Leyden Museum, Vol. XV.

abdomine lateribus strigosulo, tibiis omnibus extus denticulatis.

Hab. Bornéo (Diard). — Un seul exemplaire du Musée de Leide.

Cette *Uloma* est bien reconnaissable à son corselet quadrangulaire, à peine rétréci près des angles antérieurs, et largement tronqué en avant avec le rebord de la troncature un peu tranchant; la tête est assez fortement creusée en travers, épaissie au bord antérieur et les élytres sont assez brusquement déclives tout à fait à l'extrémité.

Nyctobates sanguinicus, n. sp.

Long. 15 mill. — Oblongus, postice leviter ampliatus, modice convexus, fuscus, vix nitidulus, femoribus (genuis exceptis) rubris; capite subtiliter punctulato, clypeo leviter transversim impresso, labro nitido, antennis sat validis, articulis 6 ultimis latioribus; prothorace transverso, antice angustato, lateribus postice sat abrupte sinuatis, dorso subtiliter punctato, medio longitudinaliter impresso, basi sat fortiter marginato et bisinuato, angulis posticis acutis; scutello triangulari, paulo depresso; elytris basi plicatis, ad humeros sat rotundatis, apice obtusis, fere triangularibus, dorso lineato-punctatis, intervallis planis, indistincte punctulatis; subtus nitidior, dense subtiliter punctatus, prosterno lato, mesosterno subtiliter carinulato, tibiis anterioribus medio leviter sinuatis, ante apicem fortiter angulatis, intus concavis.

Hab. Sumatra. — Ma collection.

Ressemble beaucoup au *Nyctobates gonager* Fairm., en diffère, outre la coloration des fémurs, par le corselet dont les côtés sont sinués avant la base, de manière à former un angle arrondi, et par les élytres non striées, n'ayant que des lignes de points avec les intervalles très plans.

Encyalesthus fuscatus, n. sp.

Long. 15 à 18 mill. — Oblongus, sat fortiter convexus, nigro-fuscus, nitidus; capite subtilissime punctulato, ver-

Notes from the Leyden Museum, Vol. XV.

tice dense subtiliter strigosulo, sutura clypeali fortiter impressa, utrinque obliquata; antennis piceo-fuscis, basin prothoracis attingentibus ♂, parum brevioribus ♀, articulo 3° sequenti paulo longiore, 6 ultimis latioribus, ♀ magis transversis; prothorace subgloboso, lateribus antice cum angulis et margine antico rotundatis, dorso subtilissime dense punctulato, basi sat fortiter marginato et medio obsoletissime impresso; scutello ogivali, vix punctulato; elytris ad humeros obliquatis, apice obtuse acuminatis, parum fortiter punctato-striatis, punctis postice obsoletis, striis 4^a 5^aque longe ante apicem conjunctis, intervallis planiusculis, vix perspicue punctulatis; subtus subtilissime punctulatus, prosterno inter coxas sat lato et impresso, postice oblique declivi et apice angulato, femoribus sat clavatis, tarsis subtus dense rufovillosis; ♂ prosterno et tibiis apice intus dense ac longe rufovillosis.

Hab. Sumatra. — Ma collection.

C'est, jusqu'à présent, le plus grand des *Encyalesthus*, bien distinct par les tibias du ♂ revêtus à la partie interne apicale de poils roux, ainsi que le milieu du prosternum.

On trouve aux îles Andaman une autre espèce également noire :

Encyalesthus andamanus, n. sp.

Long. 18 mill. — Præcedenti simillimus, sed magis niger, nitidior et levissime cœrulescens, antennis paulo brevioribus, prothorace minus convexo, magis subquadrato, dorso paulo inæquali, grosse ac inæqualiter punctato, margine antico fere recto, lateribus vix arcuatis, basi obsolete sinuatis, medio postice obsolete striato, basi utrinque parum sinuato, angulis magis acutis, scutello impresso, elytris similiter striatis, sed striis fortius punctatis, primis profundioribus, apice præsertim, intervallis convexiusculis, apice magis elevatis, lævibus, prosterno medio rugoso, inter coxas lato, leviter utrinque striato, apice late rotundato et planato, abdomine segmentis 3 primis subtiliter

Notes from the Leyden Museum, Vol. XV.

striolatis, femoribus minus crassis, tibiis glabris, anterioribus basi arcuatis.

Hab. Ins. Andaman. — Ma collection.

Encyalesthus transversicollis, n. sp.

Long. 17 mill. — Oblongus, convexus, æneus, nitidus; capite subtilissime punctulato, labro sat magno, leviter sinuato, antennis prothoracis basin haud attingentibus, articulis 6 ultimis latioribus; prothorace valde transverso, elytris parum angustiore, lateribus antice rotundatis, basi vix sensim sinuatis, dorso subtiliter et inæqualiter punctulato, lateribus marginato, basi utrinque transversim fortiter impresso, angulis posticis acutiusculis; scutello brevi, obtuso, concavo; elytris ad humeros obliquis, postice vix ampliatis, sat fortiter striatis, striis valde punctatis, intervallis lævibus, convexiusculis, postice sat fortiter convexis; subtus paulo obscurior, fere lævis, prosterno medio subtiliter rugosulo, postice lato, fere truncato, segmentis ventralibus 3 primis basi subtiliter striolatis et lateribus impressis, 3^o medio bifoveolato, tibiis 4 anticis leviter arcuatis.

Hab. Bornéo. — Ma collection.

Cette espèce est bien distincte de ses congénères par son corselet fortement transversal, bien plus large, ayant en arrière, de chaque côté, une forte impression transversale.

Encyalesthus metallescens, n. sp.

Long. 12 mill. — Oblongus, postice vix ampliatus, convexus, æneus, nitidus; capite indistincte punctulato, antice transversim profunde impresso, antennis piceis, basin prothoracis attingentibus; prothorace subgloboso, lateribus antice cum angulis et margine antico rotundatis, dorso sat fortiter convexo, subtiliter sat dense punctato, medio stria longitudinali parum impresso, basi utrinque late leviter sinuato; scutello triangulari, lævi; elytris basi et apice leviter cœruleo et aurichalceo micantibus, dorso subtiliter striolato-punctatis, intervallis planis, subtilissime dense punc-

tulatis, epipleuris cœruleis; subtus fusco-metallescens, nitidus, fere lævis, femoribus clavatis.

Hab. Sumatra; Singapore (Raffray). — Ma collection.

Ressemble assez au *brevicornis*, mais plus étroit, avec le corselet ponctué différemment, ayant au milieu une faible strie longitudinale; les élytres sont plus finement striées, mais les stries sont plus ponctuées et les intervalles plus plans, plus lisses.

Necrobioides sulcaticollis, n. sp.

Long. 13 mill. — *Encyalestho metallescenti* simillimus, sed magis æneus, prothorace angustiore, magis globoso, medio sat fortiter sulcato, lateribus haud marginato, sed basi utrinque breviter sulcato et plicatulo, scutello haud impresso, elytris unicoloribus, similiter striatis, subtus cum pedibus violaceo tinctus, lævis.

Hab. Bornéo. — Ma collection.

Cette espèce, qui ressemble extrêmement à l'*Encyalesthus metallescens*, diffère de ses deux congénères par sa taille bien plus forte et son corselet sillonné sur le disque.

Necrobioides bicolor, n. sp.

Long. 8 mill. — *N. cœruleato* simillimus, sed paulo minor et elytris aliter coloratis, aurichalceis, paulo brevioribus, striis fortius punctatis, intervallis evidentius punctulatis, subtus cum pedibus fusco-ænescens, femoribus apice cœruleatis.

Hab. Bornéo occ.: Sambas (Dr. J. Bosscha). — Un seul exemplaire du Musée de Leide.

Catapiestus simillimus, n. sp.

Cette nouvelle espèce ressemble extrêmement au *C. piceus* Perty, même taille, même coloration, sculpture des élytres presque semblable, mais le corselet est très différent. Au lieu d'être ponctué partout, ce sont seulement les impressions qui sont ponctuées et rugueuses, les parties convexes

sont très lisses et le disque est parcouru par un fort sillon, nettement tranché, au lieu d'un canal à bords obliques, les impressions sont plus profondes et plus nettement arrêtées; les épaules sont un peu obliques et non nettement angulées et le 7^e intervalle est un peu plus caréné. En dessous le mésosternum est plus lisse, moins impressionné, l'abdomen est bien moins ponctué, mais les premiers segments sont striolés et impressionnés, l'extrémité du 3^e et les deux derniers sont presque lisses. Les fémurs antérieurs sont tridentés en dessous avec les tibias moins fortement arqués. La coloration de cet insecte est plus noire et plus brillante.

Hab. Sumatra. — Ma collection.

On trouve aux îles Andaman une autre espèce de *Catapiestus* encore inédite:

Catapiestus piceiventris, n. sp.

Long. 11 à 14 mill. — Cet insecte est extrêmement voisin du *C. crenulicollis* Fairm., du Cambodge, en diffère par la tête plus plane, plus déprimée en avant, le corselet plus plan, plus densément ponctué, à large canal médian, la partie latérale moins convexe, le dessous du corps rougeâtre, l'abdomen plus déprimé; les fémurs antérieurs n'ont aussi qu'une très petite dent au milieu du bord inférieur; la massue des antennes est moins épaisse.

Hab. Ins. Andaman. — Ma collection.

Artactes marginicollis, n. sp.

Long. 8 mill. — *A. corrusco* simillimus, fere similiter coloratus, sed prothorace magis variegato, angulis anticis magis obtusis, capite medio haud carinulato, oculis valde distantibus, elytris minus brevibus, postice minus rotundatis, dorso fortius seriato-punctatis, punctis magis distantibus, cyaneis, purpureo fasciatis.

Hab. Sumatra. — Ma collection.

Artactes cyaneus, n. sp.

Long. 6 à 9 mill. — Rotundatus, convexus, cœruleus, nitidus, elytris limbo subtili aureo marginatis, abdomine apice pedibusque interdum viridi-aureo tinctis; capite parvo, oculis sat fortiter approximatis, sutura clypeali medio recta, utrinque sat abrupte angulata, antennis brevibus, fuscis, articulis 6 ultimis opacis, latioribus; prothorace brevissimo, antice sat emarginato, dorso subtiliter sat dense punctulato, angulis anticis valde rotundatis, margine postico ad scutellum truncato; scutello oblongo-triangulari, lævi; elytris basi late emarginatis, ad humeros producto-rotundatis, lateribus subtiliter marginatis, dorso lineato-punctatis, punctis apice tantum obsoletis, intervallis planis, lævibus, epipleuris latis, concavis; subtus subtiliter punctatus, abdomine subtiliter strigosulo.

Hab. Bornéo occ.: Sambas (Dr. J. Bosscha). — Huit exemplaires du Musée de Leide.

Cette espèce est bien reconnaissable à sa coloration uniforme avec un fin liséré doré autour des élytres qui sont orbiculaires.

On trouve à Hongkong une espèce très voisine:

*Artactes cyaneolimbat*us, n. sp.

Long. 8 mill. — Præcedenti sculptura et forma valde affinis, sed obscure æneus, nitidus, elytris limbo tenui cœruleo marginatis; capite inter oculos punctato et sat fortiter oblonge impresso, antennis fuscis, apice modice dilatatis, prothorace minus brevi, punctulato, angulis anticis parum rotundatis, scutello ovato, cœrulescente, elytris punctato-lineatis, lineis fere elevatis; subtus cum epipleuris et pedibus sat cœrulescens, abdomine subtiliter dense strigosulo, segmentis 2 ultimis lævibus.

Hab. Hongkong. — Ma collection.

La sculpture des élytres est la même que chez l'espèce précédente, mais les lignes ne sont nullement enfoncées et paraissent plutôt un peu relevées.

Artactes guttifer Waterh.

(Entom. Monthly Magaz. XIV, 1877, p. 73).

Long. 9 mill. — Brevissime ovatus, convexus, æneus, nitidissimus, subtus piceo-fuscus, pedibus fusco-ænescentibus; capite paulo cupreo micante, oculis valde approximatis, fronte inter oculos obsolete impressa, clypeo medio convexiusculo, sutura clypeali transversa, utrinque obsolete angulata, antennis gracilioribus, articulis ultimis haud transversis; prothorace brevissimo, lævi, angulis anticis valde rotundatis; scutello fere triangulari-ovato, medio cyaneo; elytris ad humeros sat angulatis, medio vix ampliatis, utrinque seriebus 8 punctatis, punctis profundis sed distantibus, violaceis et annulo violaceo circumdati, apice haud obsolescentibus; subtus subtiliter punctulatus.

Hab. Java (Macklot). — Un exemplaire du Musée de Leide.

Bien remarquable par les points violets des élytres qui sont entourés d'un petit anneau violet comme chez la *Chrysomela bicolor* de Sicile.

Les trois premiers articles des tarses ne sont pas aussi dilatés que chez le *nigritarsis*.

Artactes laevicollis, n. sp.

Long. 5 mill. — *A. corrusco* sat similis et fere similiter coloratus, sed capite subtilius punctulato, medio haud costulato, fronte angustiore, prothorace impunctato, elytris fortius seriato-punctatis, lateribus haud punctulatis, corpore subtus cum pedibus sat distinctus.

Hab. Sumatra (Deby). — Ma collection.

Ressemble extrêmement au *corruscus*, mais le corselet est imponctué, la tête plus finement ponctuée sans la petite ligne élevée longitudinale du vertex, le front est plus étroit, les angles postérieurs du corselet sont plus aigus, les points des séries élytrales plus gros et le prosternum est creusé longitudinalement au lieu d'avoir une strie de chaque côté.

Notes from the Leyden Museum, Vol. XV.

Artactes cyaneicollis, n. sp.

Long. $6\frac{1}{2}$ mill. — *A. corrusco* valde similis, sed magis cyanescens, capite minus fortiter punctato, medio haud carinulato, margine antico leviter sinuato, prothorace similiter punctulato, sed angulis anticis minus rotundatis, elytris similiter punctato-seriatis, sed lævioribus, dorso aurulento, lateribus cœruleis, subtus cum pedibus rufus, prosterno inter coxas bistriato, sed apice latiore, mesosterno latius emarginato.

Hab. Sumatra (Deby). — Ma collection.

Artactes rutilans, n. sp.

Long. 5 mill. — Hemisphæricus, nitidissimus, capite prothoraceque cyaneis, elytris aureo-cupreolis, margine laterali cyaneo, intus cœrulescente, sutura cœrulescente, subtus cum pedibus rufus; capite dense subtiliter punctato, inter oculos transversim sulcato, antennis sat gracilibus, apice crassioribus, piceis; prothorace brevissimo, lateribus fortiter marginato-sulcato, angulis anticis rotundatis, margine postico medio rotundatim sublobato, angulis obtusis, dorso subtilissime dense punctulato; scutello minuto, triangulari, lævi; elytris punctato-seriatis, intervallis latis, planis, lævibus; subtus lævis.

Hab. Bornéo (S. Müller.) — Un seul exemplaire du Musée de Leide.

Distinct par sa petite taille, sa coloration et sa forme hémisphérique, avec les épaules moins saillantes que chez ses congénères. Les tarses antérieurs sont peu dilatés.

Artactes lepidus Waterh.

(Entom. Monthly Magaz. XIV, 1877, p. 73).

Long. 4 mill. — Breviter ovalis, convexus, supra æneus, subtus piceus; fronte leviter convexa, fere lævi, clypeo subtilissime sat crebre punctulato; thorax longitudine fere triplo latiori, antice angustato, apice emarginato, angulis anticis obtusis, posticis rotundatis, basi rotundato; scutello

Notes from the Leyden Museum, Vol. XV.

parce punctulato; elytris thorace parum latioribus, regulariter striato-punctatis, punctis haud approximatis, interstitiis lævibus, lateribus leviter arcuatis, apice rotundato; antennis pedibusque piceis.

Hab. Java. — Ma collection.

Le thorax est densément mais très obsolètement ponctué, les bords sont bleus. Les élytres ont des rangées régulières de points cuivreux assez écartés; les bords réfléchis sont bleus. Les tarses antérieurs ne sont que faiblement dilatés.

Gauromaia femoralis, n. sp.

Long. 13 mill. — Oblonga, convexa, purpurina, nitida, capite paulo cœruleo tincto, subtus cum pedibus fusco-cœrulescens, femoribus ante apicem sat late rufis; capite subtiliter punctata, clypeo antice levissime sinuato, labro fere lævi, antennis fuscis, prothoracis medium superantibus; prothorace transverso, elytris angustiore, lateribus leviter arcuatis, angulis anticis sat rotundatis, dorso subtiliter punctato, disco bipunctato; scutello minuto; elytris oblongo-ovatis, ad humeros valde rotundatis, dorso punctato-substriatis, striis apice obsoletis, intervallis planatis, dense subtilissime punctulatis, suturam versus vix convexiusculis; subtus subtilissime coriaceus, abdomine dense subtiliter punctato, tarsis subtus dense rufo-villosis.

Hab. Singapore (Raffray). — Ma collection.

Forme du *dives*, mais taille plus petite et coloration des pattes bien différente.

Gauromaia semicyanea, n. sp.

Long. 9 mill. — Oblonga, convexa, nitida, capite prothoraceque cyaneis, elytris cuprino-purpureis, sutura et margine angustissime cœruleis; capite prothorace parum angustiore, sat subtiliter sat dense punctato, sutura clypeali lateribus valde impressa, labro producto, piceo, antennis fuscis, prothoracis medium haud attingentibus, articulis 5 ultimis latioribus; prothorace transverso, elytris

paulo angustiore, antice vix sensim angustiore, lateribus fere rectis, ante angulos anticos paulo arcuatis, dorso sat subtiliter sat dense punctato, lateribus et basi subtiliter marginato; scutello triangulari; elytris oblongo-ovatis, ad humeros oblique rotundatis, parum profunde striolato-punctatis, intervallis planiusculis, subtilissime coriaceis et punctulatis, striis extus et apice sat obsolescentibus; subtus cum pedibus cæruleus, nitidus, abdomine dense punctulato.

Hab. Sumatra. — Ma collection.

Forme du *dives* mais bien plus petit, de coloration un peu différente; la tête est proportionnellement plus large, plus ponctuée ainsi que le corselet qui, en outre, est plus étroit, plus finement rebordé et plus arrondi aux angles antérieurs.

Gauromaia janthina, n. sp.

Long. 8 à 10 mill. — Sat elongata, convexa, nitida, supra et pedibus cæruleo-janthina; capite prothorace parum angustiore, subtiliter punctato, labro fusco, sat producto; antennis fuscis, sat gracilibus, prothoracis basin attingentibus, articulis 7 ultimis gradatim paulo crassioribus; prothorace elytris angustiore, valde transverso, lateribus leviter arcuatis, angulis anticis sat rotundatis, dorso subtiliter dense punctato, basi transversim obsolete impresso, margine postico haud sensim utrinque sinuato; scutello triangulari, lævi; elytris oblongis, ad humeros valde rotundatis, punctato-lineatis, suturam versus vix substriatis, punctis et lineis apice obsoletis, intervallis planis, indistincte punctulatis; subtus dense punctulata.

Hab. Singapore (Raffray). — Ma collection.

Bien distincte par sa petite taille, sa forme plus étroite et sa coloration bleue en dessus.

Eucyrtus (Platycrepis) giganteus, n. sp.

Long. 24 mill. — Oblongo-ellipticus, sat convexus, nitidissimus, æneo-cupreolus, elytrorum intervallis vittula angusta sat pallide cærulescente ornatis; capite sat lato,

Notes from the Leyden Museum, Vol. XV.

brevisimo, clypeo brevi, late leviter sinuato, utrinque rotundato, epistomate declivi, transverso, picescente, labro lato, utrinque subtiliter asperato, antice medio densatim spinosulo; antennis validis, piceis, articulis 5 ultimis latis, cœrulescentibus; prothorace elytris parum angustiore, transverso, antice a medio angustato, dorso lævi, basi medio truncato, utrinque late sinuato et marginato, angulis posticis acutis, lateribus sat fortiter marginatis; scutello ogivali, polito; elytris amplis, postice vix ampliatis, sat subtiliter striatis, striis lævibus, intervallis planis, lævibus; subtus nitidus, fusco-purpurinus, cœruleo mixtus, pedibus fusco-cyaneis, purpureo tinctis, tibiis intus fulvo-villosis, femoribus 4 posticis medio et tibiis 4 posticis basi leviter arcuatis, prosterno inter coxas fortiter bisulcato, apice acuminato, tarsis latis, longe pilosis.

Hab. Sumatra. — Ma collection.

Cette espèce est le géant des *Platycrepis*; elle est en outre remarquable par la brièveté de la tête et par les élytres finement striées, à intervalles plans, parcourus par une étroite bande bleuâtre mal limitée.

Eucyrtus (Platycrepis) alternicolor, n. sp.

Long. 15 mill. — Oblonga, sat fortiter convexa, nitida, capite prothoraceque cœrulescentibus, cupreo mixtis, elytris longitudinaliter et alternatim cupreolis et cœrulescentibus, subtus cum pedibus fusca; capite subtiliter punctato, antice utrinque obsolete impressa, sutura clypeali obsoleta, antennis prothoracis basin fere attingentibus, articulis 6 ultimis latis, compressis, punctatis, opacis; prothorace elytris angustiore, valde transverso, antice angustato, lateribus valde marginatis, antice cum angulis fortiter rotundatis, basi vix sinuatis, dorso sat dense parum fortiter punctato, basi sat fortiter marginato et utrinque sinuato, angulis posticis acutis; scutello acute ogivali, lævi; elytris postice vix ampliatis, ad humeros rotundatis, valde convexis, striatis, striis sat tenuibus, fere lævibus aut potius vix perspicue punctulatis, intervallis fere planis, striis 2 externis

Notes from the Leyden Museum, Vol. XV.

ad humeros abbreviatis; subtus cum pedibus fuscus, sat nitidus, vage metallescens, tibiis anticis arcuatis, tarsis crassis, anterioribus paulo latioribus, densius setosulis.

Hab. Sumatra. — Ma collection.

Ressemble assez au *P. latitarsis*, mais plus petit, plus oblong, plus convexe, d'une coloration assez différente, avec le corselet non impressionné à la base, les élytres à stries plus fines, à intervalles plus plans, et les tarses antérieurs moins dilatés, les 4 postérieurs seulement épaissis.

Eucyrtus trapezicollis, n. sp.

Long. 12 à 13 mill. — Oblongus, valde convexus, totus supra brunneo-æneus, metallicus; capite ante oculos brevi, dense sat subtiliter punctato, epistomate producto, ferrugineo, labro sat magno; antennis fuscis, prothoracis basin haud attingentibus, apice dilatatis, compressis; prothorace elytris haud angustiore, longitudine duplo latiore, trapeziformi, antice angustato, lateribus rectis, fortiter marginatis, angulis anticis sat productis, dorso dense sat subtiliter punctato, margine postico utrinque late sinuato, angulis sat acutis; scutello acute ogivali, polito; elytris oblongis, valde convexis, ad humeros angulatis, apice rotundatis, subtiliter striatis, striis vix impressis, vage purpurinis, apice haud oblitteratis, intervallis planissimis, lævibus; subtus fusco-purpurascens, nitidus, lateribus et abdomine subtilissime punctato, hoc lateribus impresso, pedibus fusco-æneis, mediocribus, tarsis subtus pilosis, anticis ♂ sat dilatatis.

Hab. Java. — Ma collection.

Cet insecte présente un faciès assez différent des autres *Eucyrtus* à cause de son corselet aussi large que les élytres, à côtés droits, et de ses élytres à stries extrêmement fines. Les tarses antérieurs un peu dilatés le rapprochent du groupe des *Platycrepis*.

Eucyrtus purpurinus, n. sp.

Long. 16 mm. — Oblongo-ovatus, sat convexus, supra purpurinus, valde nitidus, capite antice et elytris viridi-

Notes from the Leyden Museum, Vol. XV.

micantibus; capite subtilissime punctulato, ante oculos brevissimo, epistomate brevissimo, rufo, labro sat magno, fusco, antice ciliato; antennis fuscis, prothoracis basin haud attingentibus, articulis 6—10 latis, compressis, punctatis; prothorace sat angustato, antice sat fortiter angustato, lateribus sat fortiter marginatis, arcuatis, margine antico medio rotundato, angulis rotundatis, dorso subtiliter sat dense punctulato, basi quadriimpresso, angulis sat fortiter acutis; scutello ogivali, plano; elytris ovatis, ad humeros sat rotundatis, postice leviter ampliatis, apice sat acuminatis, dorso sat tenuiter sed sat acute striatis, striis subtilissime punctulatis, intervallis planissimis, indistincte punctulatis; subtus cœruleus, punctulatus, abdomine densissime subtiliter punctato-stri-goso, prosterno inter coxas fortiter bisulcato, pedibus cyaneis, tarsis sat crassis, subtus dense rufo-pilosis.

Hab. Java. — Ma collection.

Voisin du *splendens*, mais la tête et le corselet sont différemment colorés, ce dernier est plus étroit, plus rétréci en avant, les angles postérieurs sont plus saillants, les élytres sont bien moins angulées aux épaules, les intervalles des stries sont très plans et les antennes sont plus courtes.

Eucyrtus laticollis, n. sp.

Long. 18 mill. — *E. purpurino* valde affinis, sed paulo major, supra aurichalceus, capite prothoraceque leviter purpurino tinctis, capite similiter brevissimo, clypeo late sinuato, epistomate late distincto, rufo, labro leviter sinuato, prothorace latiore, brevior, longitudine fere duplo latiore, elytris postice paulo magis ampliatis, apice similiter acuminatis, similiter striatis, intervallis lævioribus; subtus æneus, purpurino tinctus, abdomine lævior.

Hab. Malaisie. — Ma collection.

Plus grand que le *purpurinus*, d'une coloration un peu plus bronzée, distinct par l'épistôme largement découvert et le corselet bien plus large, moins rétréci en avant.

Eucyrtus subvittatus, n. sp.

Long. 14 mill. — Oblongus, convexus, nitidus, viridicærulescens, prothorace transversim purpureo tincto, elytris purpureo vittulatis, striis viridibus; capite subtiliter dense punctato, summo supra oculos transversim læviore, antice convexiusculo, haud impresso, nec breviter truncato, antennis fuscis, medium prothoracis vix attingentibus, articulis 6 ultimis latis, transversis, punctatis; prothorace valde transverso, elytris angustiore, lateribus sat fortiter marginatis, antice cum angulis rotundatis, dorso sat dense parum tenuiter punctato, angulis posticis acutis, fere spinosis; scutello plano, sat late ogivali, lævi; elytris modice striatis, striis lævibus, intervallis planis, lævibus; subtus cum pedibus fuscus, sat nitidus, lævis, abdomine dense subtilissime strigosulo-punctato, prosterno inter coxas concavo, pedibus modice validis, tarsis subtus rufo-villosis.

Hab. Bornéo occ.: Sambas (Dr. J. Bosscha). — Un seul exemplaire du Musée de Leide.

Ressemble à l'*E. pretiosus* pour la forme générale et notamment pour le corselet, mais la coloration est bien différente, les antennes sont plus courtes, les élytres sont nettement striées et les côtés du corselet ne sont pas distinctement sinués à la base.

Eucyrtus purpureotinctus, n. sp.

Long. 10 à 12 mill. — Oblongo-ellipticus, modice convexus, valde nitidus, cæruleus, elytris post basin purpureis, deinde gradatim æneo-auratis et ante apicem purpureis; capite subtiliter punctato, clypeo brevissimo, sutura profunda, epistomate fere verticali, rufescente, labro apice rufescente, antennis basin prothoracis fere attingentibus, articulis 6 ultimis latis, compressis, opacis; prothorace valde transverso, elytris paulo angustiore, antice paulo angustato, lateribus leviter rotundatis, basi sinuatis, angulis posticis sat acutis, extus paulo divaricatis, dorso subtilissime punc-

Notes from the Leyden Museum, Vol. XV.

tulato, lateribus sat fortiter marginato, basi pluriimpresso, haud marginato, bisinuato; scutello ogivali, polito; elytris basi truncatis, postice leviter ampliatis, ad humeros angulatis, sat fortiter striatis, striis obsolete punctulatis, basi et apice profundioribus, tribus externis ad humerum abbreviatis, intervallis vix convexiusculis, lævibus, postice paulo magis convexis; subtus cum pedibus fusco-metallescens, sat nitidus, pedibus sat brevibus.

Hab. Bornéo (S. Müller). — Quelques exemplaires du Musée de Leide.

Cet *Eucyrtus* est moins convexe que ses congénères, et sa forme rappelle plutôt celle des *Ceropria*; le corselet est tout à fait celui des grands *Eucyrtus*.

Eucyrtus pilipes, n. sp.

Long. 15 mill. — Ovato-oblongus, postice paulo ampliatus, valde convexus, fere gibbosus, nitidissimus, vernicatus, æneo-cupreolus, capite prothoraceque purpurino leviter tinctis, elytris cœrulescenti et purpurino micantibus, striis purpurinis; capite brevi, indistincte punctulato, epistomate et labri apice ferrugineis, antennis prothoracis medium vix attingentibus, articulis 6 ultimis latis, compressis, opacis; prothorace transverso, elytris angustiore, lateribus marginatis, sat rotundatis, basi paulo sinuatis, dorso indistincte punctulato, basi pluriimpresso et utrinque sinuato, angulis posticis acutis, anticis valde obtusis; scutello acute ogivali, lævi; elytris medio valde convexis, ad humeros sat angulatis, apice conjunctim obtusis, dorso tenuiter sed acute striatis, striis basi punctulatis, intervallis planissimis, politis; subtus fusco-ænescens, nitidus, cœrulescenti tinctus, lævis, pedibus fuscis, tibiis sat longe dense brunneo-pilosis, tarsis crassis, sat brevibus, haud dilatatis.

Hab. Bornéo (S. Müller). — Un seul exemplaire du Musée de Leide.

Cet insecte est remarquable par ses élytres gibbeuses, rappelant celles des *Erotyles*, par sa coloration vernissée et ses tibias velus.

Notes from the Leyden Museum, Vol. XV.

Eucyrtus multicolor, n. sp.

Long. 9 mill. — Ovatus, postice ampliatus, valde convexus, supra metallicus, æneo-viridis, capite cupreo mixto, prothorace vittis 2 transversis cupreis, elytris viridi et cupreo fere tessellatis; capite brevi, subtilissime punctulato, epistomate rufo, antennis fuscis, medium prothoracis vix superantibus, articulis 6 ultimis latis, compressis; prothorace valde transverso, elytris paulo angustiore, antice a basi angustato, lateribus parum arcuatis, marginatis, basi haud sinuata, utrinque late sinuata, angulis posticis acutiusculis, dorso subtilissime sat dense punctulato; scutello sat lato, ogivali, lævi; elytris ovatis, apice obtusis, medio valde convexis, parum profunde striatis, striis vix distincte punctulatis, apice profundioribus, 6—8 ad humeros abbreviatis, intervallis planis, lævibus; subtus fuscus, vage cœrulescens, modice nitidus, fere lævis, metapleuris dense punctatis.

Hab. Bornéo. — Ma collection.

Ressemble un peu, pour la forme générale, au *Platycrepis latitarsis* de Sumatra, mais plus petit, plus court, plus convexe, avec le corselet simplement rétréci en avant, les bords latéraux non sinués à la base, et les tarses non dilatés.

Eucyrtus truncaticeps, n. sp.

Long. 10 mill. — *E. multicolori* valde similis, sed capite prothoraceque violaceis, purpureo tinctis, elytris longius fasciolatis, nitidioribus et paulo magis purpureo-cupreo tinctis; capite ante oculos brevissimo, epistomate et labro protensis, oculis extus fortiter angulatis, antennis fuscis, prothoracis basin fere superantibus, articulis 6 ultimis latis, compressis; prothorace sat parvo, elytris angustiore, longitudine duplo latiore, antice paulo angustato, lateribus fortiter marginatis, antice cum angulis rotundatis, postice levissime sinuatis, angulis posticis paulo exsertis, dorso subtiliter sat dense punctulato, basi utrinque biimpresso;

Notes from the Leyden Museum, Vol. XV.

scutello lato, lævi; elytris sat late ovatis, postice paulo ampliatis, modice striatis, striis subtiliter punctatis, apice haud obsolescentibus, intervallis fere planis, lævibus; subtus cum pedibus fusco-cœrulescens, subtiliter punctatus, prosterno lævi, tibiis intermediis fere angulatim arcuatis.

Hab. Singapore (Raffray). — Ma collection.

Eucyrtus gibbosulus, n. sp.

Long. 5 mill. — Ovatus, valde convexus, gibbosulus, nitidus, capite prothoraceque virescenti-cœruleis, elytris basi et apice similiter coloratis, dorso paulo aurulentis et utrinque gradatim purpureis; capite subtilissime punctulato, sutura clypeali profunda arcuata, clypeo antice sinuato, cum labro rufescente, ore et antennis rufis, his apice obscurioribus, articulis 6 ultimis latioribus; prothorace elytris valde angustiore, fortiter transverso, lateribus fortiter marginatis, antice cum angulis rotundatis, basi paulo sinuatis, dorso dense punctato, postice transversim sat late impresso, basi haud marginato, angulis acutiusculis; scutello triangulari, lævi; elytris ovatis, medio valde convexis et ampliatis, apice obtusis, dorso substriato-punctatis, intervallis planis, subtilissime punctatis, 8° apice breviter subcostato; subtus cum epipleuris fusco-piceus, modice nitidus, pedibus rufis.

Hab. Bornéo occ.: Sambah (Dr. J. Bosscha). — Un seul exemplaire du Musée de Leide.

Cette espèce est remarquable par sa petite taille et sa forme gibbeuse un peu anormale.

Eucyrtus aurobasalis, n. sp.

Long. 7 mill. — Oblongus, convexus, cyaneus, nitidus, elytris basi cupreo-auratis, post basin transversim violaceomicantibus; capite subtilissime punctulato, antice transversim haud impresso, antennis sat gracilibus, articulis 5 ultimis latioribus, minus transversis; prothorace transverso, lateribus leviter rotundato et cum basi marginato, angulis posticis acutis, dorso vix perspicue punctulato; scutello sat

Notes from the Leyden Museum, Vol. XV.

triangulari, lævi; elytris ovatis, subparallelis, sat fortiter punctato-striatis, punctis mox obsolescentibus, apice oblitteratis, intervallis convexiusculis, lævibus; subtus fusco-cærulescens, pedibus fusco-cyaneis.

Hab. Nouvelle Guinée: Andai (v. Rosenberg). — Deux exemplaires du Musée de Leide.

Ressemble beaucoup à l'*E. carbunculus* Fairm., de Sumatra, en diffère par la taille plus faible, les antennes moins élargies à l'extrémité, le corselet bien plus court, plus fortement marginé sur les côtés et à la base, et par les élytres plus fortement striées, les points des stries bien plus marqués à la base, à intervalles convexes et par la coloration différente.

Eucyrtus fasciolatus, n. sp.

Long. 5 à 6 mill. — Oblongo-ovatus, modice convexus, valde nitidus, capite prothoraceque cærulescentibus, hoc medio paulo aurulento, elytris cærulescentibus, basi et postice aureo-cupreolis aut purpureis, medio et apice cyaneo-violaceo fasciolatis; capite punctato, ante oculos transversim utrinque impresso; prothorace elytris vix angustiore, longitudine plus duplo latiore, antice parum angustato, lateribus vix arcuatis, marginatis, dorso laxo punctato, basi medio paulo lobato; scutello minuto; elytris ad humeros recte angulatis, apice rotundatis, lineato-punctatis, punctis parum densatis, post medium obsoletis, linea suturali substriata; subtus cum pedibus fuscus.

Hab. Java (Blume), Bornéo (Schwaner). — Deux exemplaires du Musée de Leide.

Ressemble assez à l'*E. aurobasalis*, mais le corselet est bien plus large, plus court, avec les côtés à peine arqués et bien moins marginés; la coloration rappelle beaucoup celle du *Pseudeumolpus castaneipes*.

Eucyrtus semipunctatus, n. sp.

Long. 5 $\frac{1}{2}$ mill. — *E. fasciolato* sat affinis, sed paulo angustior, capite prothoraceque obscure æneis, modice ni-

Notes from the Leyden Museum, Vol. XV.

tidis, elytris nitidioribus, cœruleo et purpureo fasciolatis, medio cyaneo transverse signatis; capite prothoraceque dense punctatis, sutura clypeali utrinque valde obliquata et profunda; prothorace transverso, elytris vix angustiore, antice angustato, lateribus leviter arcuatis, angustissime marginatis, basi transversim impressiusculo et lævissime utrinque sinuato, angulis posticis acute rectis, anticis parum exsertis; scutello lævi, obtuso, fere transverso; elytris ad humeros sat angulatis, oblongis, striato-punctatis, striis parum profundis, suturam versus et præsertim apice magis impressis, intervallis planis, subtilissime punctulatis, apice paulo convexiusculis; subtus cum pedibus et epipleuris fusca, vix cœrulescens, sat dense punctata.

Hab. Java (Blume). — Un seul exemplaire du Musée de Leide.

Certains *Eucyrtus* paraissent ressembler à des *Lina*, mais cette espèce ressemble plutôt à une *Phratora*; elle est remarquable par la ponctuation serrée de la tête et du corselet, et par les bords latéraux de ce dernier qui sont à peine marginés. La coloration ressemble beaucoup à celle du *fasciolatus*.

Eucyrtus oblongulus, n. sp.

Long. $8\frac{1}{2}$ mill. — Oblongus, convexus, postice levissime ampliatus, nitidus, fuscus, paulo cœrulescens, elytris æneo-viridibus, vage purpurino micantibus; capite minore, ante oculos brevi, subtiliter dense punctulato, inter oculos transversim sulcato, his sat approximatis, extus productis, antennis prothoracis basin attingentibus, articulis 6 ultimis gradatim valde latioribus; prothorace transverso, elytris paulo angustiore, lateribus sat fortiter marginatis, antice cum angulis rotundatis, dorso polito, postice medio transversim impresso et utrinque foveolato; scutello sat magno, ogivali, plano; elytris oblongo-ovatis, ad humeros sat rotundatis, modice striatis, striis subtilissime punctulatis, extus minus impressis, 2 primis paulo profundioribus, intervallis planatis, subtilissime punctulatis; subtus lævis,

Notes from the Leyden Museum, Vol. XV.

abdomine indistincte punctulato, tibiis basi leviter arcuatis, apice intus cum femoribus fulvo-pilosis, tarsis sat latis, subtus dense pilosis.

Hab. Singapore (Raffray). — Ma collection.

Cet *Eucyrtus* se distingue par sa forme oblongue, un peu parallèle, sa tête plus petite, très courte en avant, ses yeux plus rapprochés et plus saillants en dehors; les élytres sont presque unicolores, n'ayant que de faibles reflets purpurins, et les tarses sont larges, surtout les antérieurs.

Eucyrtus subcostatus, n. sp.

Long. 9 mill. — Sat elongatus, subparallelus, sat convexus, supra cœruleus, nitidus, subtus fuscus, pedibus testaceo-castaneis; capite dense punctulato, sutura clypeali profunda, clypeo antice leviter sinuato, labro distincto, rufescente, antennis rufo-piceis, medium prothoracis fere superantibus, articulis 6 ultimis sat gradatim modice latioribus; prothorace elytris angustiore, sat transverso, antice parum angustato, lateribus vix arcuatis, undulato-marginatis, dorso dense sat fortiter punctato, basi medio leviter arcuatim lobato et transversim anguste impresso; scutello minuto; elytris oblongis, parallelis, ad humeros parum rotundatis, punctato-seriatis, vix substriatis, externis magis impressis, intervallis planis, fere indistincte punctulatis, 5^o 6^oque costulatis, 4^o apice breviter costulato, spatio marginali lævi; subtus sat fortiter punctatus.

Hab. Bornéo: Sintang. — Un seul exemplaire du Musée de Leide, présenté par M. G. Severin.

Cette espèce est remarquable par sa forme très oblongue, presque parallèle, et ses élytres carénées en dehors, ainsi que par la coloration des pattes.

Eucyrtus protensus, n. sp.

Long. 7 mill. — Oblongus, subparallelus, modice convexus, cœruleus, nitidus, subtus cum pedibus, ore et antennis rufus; capite sat fortiter dense, clypeo subtiliter punctato, margine antico leviter sinuato, antennis sat

Notes from the Leyden Museum. Vol. XV.

gracilibus, prothoracis basin fere attingentibus, articulis 6 ultimis modice dilatatis; prothorace elytris vix angustiore, valde transverso, antice haud angustiore, lateribus modice marginatis, antice leviter rotundatis, basi vix sensim sinuatis, dorso dense sat subtiliter punctato, angulis anticis valde obtusis, basi sat marginato et utrinque sat sinuato, angulis acutiusculis; scutello fere concavo; elytris oblongis, ad humeros sat angulatis, modice striato-punctatis, stria suturali paulo magis impressa, intervallis planis, dense subtiliter punctatis, basi post scutellum utrinque impressione obliqua sat obsolete signatis; subtus dense sat subtiliter punctatus, prosterno lateribus fortius punctato, inter coxas utrinque leviter striato.

Hab. Singapore (Raffray). — Ma collection.

Forme du *subcostatus*, mais outre la différence de taille le corselet n'est pas denticulé latéralement, ni impressionné à la base, les élytres sont un peu plus courtes et les pattes bien moins robustes.

Eucyrtus vittulatus, n. sp.

Long. 5 mill. — Oblongo-ovatus, postice paulo ampliatus, sat fortiter convexus, nitidus, capite prothoraceque purpureo, viridulo et auroso mixtis, elytris purpureis, prope suturam, disco et ad marginem viridulo-vittatis; capite sat parvo, subtiliter dense punctato, inter oculos profunde transversim sulcato, clypeo brevi, epistomate producto, antennis prothoracis medium paulo superantibus, basi rufis, apice fuscis et dilatatis; prothorace elytris paulo angustiore, longitudine fere duplo latiore, antice leviter angustato, lateribus antice cum angulis rotundatis, sat anguste marginatis, dorso subtilissime dense punctulato, margine postico medio truncato et utrinque vix sinuato; scutello sat magno, ogivali, punctulato; elytris ovato-oblongis, ad humeros sat angulatis, fortiter convexis, leviter striatis, striis indistincte punctulatis, intervallis planis, subtiliter dense punctatis; subtus cum pedibus æneus, subtiliter punctatus, prosterno inter coxas convexiusculo.

Notes from the Leyden Museum, Vol. XV.

Hab. Sumatra. — Ma collection.

Ressemble assez au *gibbosulus*, mais moins convexe; le corselet est très différent ainsi que les antennes.

Eucyrtus immarginatus, n. sp.

Long. 7 mill. — Oblongus, convexus, cœruleus, nitidus, elytris vix virescenti-cœruleis; capite dense punctato, antice arcuatim impresso, margine antico fere truncato, antennis sat gracilibus, basi rufescentibus, apice fuscis et parum dilatatis, articulo 3^o sequenti paulo longiore; prothorace transverso, elytris vix angustiore, antice parum angustato, lateribus parum arcuatis, angustissime marginatis, dorso sat subtiliter dense punctato, postice transversim paulo impresso, margine postico utrinque vix sinuato, angulis posticis brevissime acutiusculis; elytris ad humeros sat fortiter angulatis, postice vix sensim ampliatis, punctato-striatulis, striolis primis apice magis impressis, intervallis planatis, subtilissime dense punctulatis; subtus cum pedibus fuscus, subtiliter punctulatus, prosterno inter coxas sat fortiter canaliculato.

Hab. Bornéo (S. Müller). — Un seul exemplaire du Musée de Leide.

Cette espèce est remarquable par son corselet à peine marginé latéralement et par ses antennes grêles.

Eucyrtus picicornis, n. sp.

Long. 6 à 7 mill. — Præcedenti simillimus, similiter coloratus, et tantum antennis piceolis, articulo 3^o sequenti haud sensim longiore, prothorace paulo fortius et minus dense punctato, basi inopius ad marginem leviter impresso, angulis anticis magis rotundatis, postice magis acutis, corpore subtus cum pedibus rufulo et prosterno lateribus fortiter punctato et inter coxas haud canaliculatus sat distinctus.

Hab. Bornéo (S. Müller). — Trois exemplaires du Musée de Leide.

Eucyrtus neomidinus, n. sp.

Long. 5 mill. — Oblongus, convexiusculus, cyaneus, nitidus, subtus cum pedibus et ore rufo-piceus; capite subtiliter dense punctato, sutura clypeali medio vix distincta, antennis gracilibus, medium prothoracis valde superantibus, fuscis, basi rufescentibus, articulis 7 ultimis paulo dilatatis, articulo 3^o secundo et quarto haud sensim latiore, ceteris paulo serratis; prothorace elytris vix angustiore, valde transverso, antice angustato, lateribus leviter arcuatis, dorso subtiliter dense punctato, lateribus angustissime marginato, margine postico vix utrinque sinuato, medio paulo lobato, angulis posticis fere obtusis; scutello triangulari, fere lævi; elytris ovatis, ad humeros sat angulatis, punctato-striatis, striis sat impressis, intervallis vix convexiusculis, subtilissime punctulatis; pectore lævi, prosterno inter coxas convexiusculo, abdomine sat fortiter dense punctato.

Hab. Bornéo: Moeara teweh (J. Semmelink). — Trois exemplaires du Musée de Leide.

Ressemble un peu aux deux espèces précédentes, mais bien plus petite, plus elliptique, avec le corselet plus rétréci en avant, les élytres plus courtes et la massue antennaire formée par 7 articles.

Pseudeumolpus simulator, n. sp.

Long. 16 mill. — Oblongus, sat fortiter convexus, aurichalceus, nitidus, capite prothoraceque late purpurino tinctis, elytris leviter et longitudinaliter purpurino micantibus; capite sat lato, subtilissime punctato, inter antennis biimpresso, sutura clypeali sat impressa, antennis fuscis, brevibus, medium prothoracis vix attingentibus, articulis 6 ultimis gradatim latioribus; prothorace elytris angustiore, transverso, antice leviter angustato, lateribus parum arcuatis, angulis anticis fere rotundatis, dorso sat subtiliter sat dense punctato, disco levissime quadrifoveolato, basi late bisinuato, angulis acute rectis; scutello triangulari, lævi; elytris oblongis, ad humeros paulo obliquatis, postice haud

sensim ampliatis, apice obtusis, dorso punctato-striatis, striis parum profundis, intervallis lævibus, planiusculis; subtus fusco-cœrulescens, minus nitidus, abdomine subtiliter dense punctato, basi fortius, apice fere lævi, segmento penultimo rufescente, pedibus validis, nitidis, femoribus anticis sat inflatis, subtus dente lato, acuto armatis, tibiis anticis leviter arcuatis.

Hab. Bornéo occ.: Sambas (Dr. J. Bosscha). — Un seul exemplaire du Musée de Leide.

Cet insecte est un des plus grands du genre; il ressemble assez à un *Gauromaia* par sa tête un peu large et son corselet peu marginé latéralement. Très voisin du *purpuricollis*, mais avec le corselet moins large, différemment coloré, n'ayant que 2 faibles impressions sur le disque, moins fortement marginé sur les côtés et le dessous du corps bleuâtre; les élytres sont un peu plus étroites et un peu moins convexes.

Pseudeumolpus picticollis, n. sp.

Long. 14 mill. — Præcedenti valde affinis, sed minor et brevior, prothorace sensim brevior, lateribus fortius marginato, margine antico magis recto, dorso magis purpureo, viridi et auroso longitudinaliter fasciolato, elytris paulo brevioribus, striis minus impressis et postice oblitteratis, intervallis magis planatis, subtiliter punctulatis, minus nitidis, subtus magis cyanescens, femoribus anticis similiter armatis.

Hab. Singapore (Raffray). — Ma collection.

Pseudeumolpus decretus, n. sp.

Long. 9 à 10 mill. — Præcedenti simillimus sed multo minor et paulo angustior, antennis minus latis, articulis 5 ultimis tantum dilatatis, prothorace paulo angustiore, angustius marginato, angulis posticis minus productis, elytris nitidioribus, sulco marginali anguste cœruleo, usque ad apicem prolongato; subtus cum pedibus fuscus, leviter

Notes from the Leyden Museum, Vol. XV.

violascens, lævis, femoribus anticis acute dentatis, tibiis basi leviter arcuatis.

Hab. Singapore (Raffray). — Ma collection.

Pseudeumolpus purpuricollis, n. sp.

Long. 16 mill. — Oblongus, postice parum ampliatus, sat convexus, nitidus, capite prothoraceque purpureis, cœruleo mixtis, elytris æneis, cœruleo angustissime marginatis; capite subtiliter punctulato, sutura clypeali medio parum distincta, utrinque antice angulata, evidentiore et extus plicatulo, antennis fuscis, medium prothoracis paulo superantibus, articulis 6 ultimis valde transversis, dense punctatis; prothorace transverso, elytris angustiore, antice paulo angustato, lateribus leviter arcuatis et anguste marginatis, dorso vix perspicue punctulato, medio impressiusculo, basi subtiliter marginato et utrinque late sinuato, angulis posticis acutiusculis, anticis obtusis; scutello sat brevi, late ogivali, lævi; elytris medio sat convexis, ad humeros sat rotundatis, apice obtusis, sat subtiliter lineato-punctatis, suturam versus vix substriatulis, intervallis planis, suturam versus vix convexiusculis, lævibus; subtus cyaneus, nitidus, paulo purpureo tinctus, pedibus fuscis, nitidis, femoribus anticis subtus ante apicem dente valido armatis, et tibiis leviter arcuatis, tarsis subtus dense fulvopilosis.

Hab. Sumatra. — Ma collection.

Chez cet insecte et les suivants le corselet n'est pas défléchi sur les côtés; il est conformé comme chez les grands *Eucyrtus*, mais les fémurs antérieurs sont armés en dessous d'une forte dent.

Pseudeumolpus polychromus, n. sp.

Long. 11 mill. — *P. purpuricollis* forma et prothoracis colore valde affinis sed multo minor, elytris purpureo, violaceo, cœruleo et paulo auroso longitudinaliter ac breviter fasciolatis, basi magis cœruleis, prothorace paulo brevior, antice late sinuato, angulis minus rotundatis,

Notes from the Leyden Museum, Vol. XV.

dorso subtilius punctato, postice utrinque foveolis 2 valde approximatis, postica paulo transversa, ad marginem anticum utrinque impressiusculo, scutello multo minore; subtus fusco-cœrulans, leviter purpurino tinctus, femoribus gracilibus.

Hab. Singapore (Raffray). — Ma collection.

En outre des différences ci-dessus détaillées, les fémurs postérieurs ne sont pas, comme chez le *purpuricollis*, obtusément angulés en dessous au milieu.

Pseudeumolpus Raffrayi, n. sp.

Long. 10 mill. — Præcedenti sat similis, sed paulo minor, magis convexus, capite prothoraceque purpureis, elytris basi cœruleis, deinde transversim et alternatim purpureo, auroso et cyaneo fasciolatis; capite dense minus subtiliter punctato, prothorace paulo angustiore, fortius punctato, lateribus magis rotundatis, dorso basi medio fere lobato et crassius marginato, disco haud foveolato, scutello majore, elytris evidentius punctatis, subtus magis piceus, abdomine subtiliter punctulato, femoribus anticis similiter armatis.

Hab. Singapore (Raffray). — Ma collection.

Pseudeumolpus rotundicollis, n. sp.

Long. 9 mill. — Oblongus, sat fortiter convexus, postice levissime ampliatus, capite prothoraceque violaceis, leviter purpureo micantibus, elytris cupreolis, lateribus magis viridi-aurichalceis, striis virescentibus; capite minus lato, subtilissime punctulato, basi fere lævi, antice impressiusculo, antennis angustioribus et paulo longioribus; prothorace transverso, elytris angustiore, lateribus rotundatis, angulis anticis fere rotundatis, margine antico late arcuato, dorso vix perspicue punctulato, margine postico medio obtusissime angulato, angulis posticis fere rectis; scutello sat minuto; elytris ovatis, basi truncatis, ad humeros rotundatis, substriato-punctatis, striis parum impressis, apice obsoletis, intervallis planiusculis, dense sub-

Notes from the Leyden Museum, Vol. XV.

tilissime punctulatis; subtus cum epipleuris et pedibus fuscus, leviter cœruleo et purpurino tinctus, femoribus anticis dente minus lato, acuto armatis.

Hab. Singapore (Raffray). — Ma collection.

Pseudeumolpus semiarmatus, n. sp.

Long. 10 mill. — Oblongus, sat convexus, nitidus capite prothoraceque viridulis, elytris aurichalceis, margine laterali angustissime viridulo; capite sat lato, antice late rotundato, sat dense subtiliter punctato, medio late levissime impresso, antennis brevibus, articulis 5 ultimis latioribus; prothorace transverso, elytris angustiore, antice vix angustiore, lateribus sat rotundatis, dorso subtilissime punctulato, lateribus et basi sat subtiliter marginato, angulis anticis obtusis; scutello sat minuto, lævi; elytris oblongo-ovatis, ad humeros rotundatis, apice obtusis, dorso substriatulo-punctatis, striis extus et apice minus impressis, intervallis planiusculis, fere lævibus; subtus fusco-cœrulescens, modice nitidus, fere lævis, abdomine dense subtiliter punctato, apice fere lævi; femoribus anticis ♂ dente sat acuto subtus armatis, ♀ inermibus.

Hab. Sumatra: Fort de Kock. — Ma collection.

Ressemble au *rotundicollis*, la tête et le corselet sont verdâtres au lieu d'un beau bleu, les stries des élytres sont moins fortes et moins ponctuées, les intervalles plus plans; en outre les 2 sexes sont assez différents, le ♂ ayant une dent aiguë aux fémurs antérieurs, qui sont inermes chez la ♀, et les angles postérieurs du corselet formant une très petite épine, tandis qu'ils sont simplement droits chez la ♀.

Pseudeumolpus castaneipes, n. sp.

Long. 5 mill. — Ovatus, valde convexus, valde nitidus, capite viridi-æneo, prothorace purpureo, cœruleo et cupreo mixto, elytris purpureis, basi, ante et post medium transversim viridi-metallico fasciolatis, medio vitta violacea transversali ornatis; capite punctato, inter oculos

late leviter impresso, palpis et antennis rufis, his brevibus, prothoracis medium haud attingentibus, articulis 4 ultimis latis, clavatis, dense punctatis, opacis; prothorace valde transverso, elytris paulo angustiore, antice sat angustato, lateribus antice sat fortiter rotundatis, subtiliter marginatis, dorso punctulato, basi vix marginato, angulis posticis acutiusculis, anticis obtusissimis; scutello minuto, apice obtuso; elytris valde convexis, sat fortiter substriato-punctatis, intervallis fere planis, lævibus; subtus cum pedibus piceus, femoribus anticis inflatis, subtus dente valido armatis, tibiis anticis arcuatis.

Hab. Bornéo occ.: Sambah (Dr. J. Bosscha). — Un seul exemplaire du Musée de Leide.

Cette petite espèce présente plutôt la coloration des *Eucyrtus* avec les bandes pourpres et violettes, se fondant sur les bords, aux élytres; la tête est largement impressionnée et les côtés du corselet sont peu déclives.

Pseudonautes, n. g.

Ce nouveau genre, dont le faciès rappelle celui des *Nautes* d'Amérique, diffère des *Eucyrtus* par les antennes qui sont longues, dépassant notablement la base du corselet, grêles, avec les 5 ou 6 derniers articles un peu élargis mais non transversaux, le 3^e un peu plus long que le 4^e. La tête est assez large, les yeux très écartés, moins saillants. Le corselet est large, très court, étroitement rebordé. La poitrine et les pattes sont comme chez les *Eucyrtus*, mais les articles des tarses antérieurs sont assez larges, courts, le 4^e bilobé à tous les tarses et pas plus étroit que le précédent.

Pseudonautes vagevittatus, n. sp.

Long. 11 à 12 mill. — Ovato-oblongus, modice convexus, capite prothoraceque æneis, purpureo tinctis aut cupreo-purpureis, virescenti mixtis, elytris viridi-metallicis, sutura, vitta discoidali et margine purpureis; capite sat lato, parum brevi, sutura clypeali medio impressa, clypeo

Notes from the Leyden Museum, Vol. XV.

sat magno, dense strigoso-punctato; prothorace brevi, longitudine plus duplo latiore, elytris paulo angustiore, antice paulo angustato, lateribus leviter arcuatis, dorso sat fortiter parum dense punctato, lateribus et basi sat tenuiter marginato, postice utrinque transversim impresso; scutello sat lato, apice angulato, purpureo, lævi; elytris ovato-oblongis, basi truncatis, striato-punctatis, punctis apice obsolescentibus, intervallis vix convexiusculis, lævibus; subtus similiter coloratus, nitidus, lateribus et abdomine transversim cupreolis, hoc subtiliter dense punctato, pedibus viridi et cupreo mixtis.

Hab. Bornéo occ.: Sambas (Dr. J. Bosscha), Java (Blume). — Deux exemplaires du Musée de Leide. — (Sumatra, collection Dohrn).

Cet insecte ressemble un peu à une *Ceropria*: il est bien distinct par son corselet large et court, finement rebordé, très ponctué et par sa tête assez grosse. La coloration du dessous du corps est assez remarquable.

Pseudonantes helopinus, n. sp.

Long. 8 à 9 mill. — Ovato-oblongus, sat convexus, viridi-æneus, nitidus, leviter purpurino tinctus, elytris magis aurichalceis, plus minusve purpureo et cœruleo vitulatis; capite dense punctato, sutura clypeali utrinque profundiore, antennis fusco-piceis, medium corporis haud attingentibus, apicem versus parum incrassatis, articulo 3^o quarto parum longiore; prothorace elytris angustiore, valde transverso, longitudine plus duplo latiore, antice paulo angustato, lateribus leviter rotundatis, angulis anticis parum obtusis, dorso sat dense parum subtiliter punctato, postice transversim fere obsolete impresso, margine postico utrinque late levissime sinuato, angulis subrectis; scutello ogivali, lævi; elytris ovato-oblongis, fortiter punctato-striatis, striis postice profundioribus, intervallis convexis, lævibus, postice paulo magis convexis; subtus fusco-violascens, lateribus cum epipleures virescens et purpurino mixtus, pedibus aurichalceis, prosterno an-

Notes from the Leyden Museum, Vol. XV.

gusto, abdomine subtilissime punctato et lateribus leviter impressiusculo.

Hab. Singapore (Raffray). — *Ma* collection.

Cleomis, n. g.

Ce nouveau genre se rapproche des *Cyrtosoma* et des *Cnodalon* par la conformation du mésosternum qui est fourchu avec les bords saillants, angulés en avant; mais les yeux sont plus gros, plus saillants en dehors, un peu plus rapprochés sur le front; les antennes, assez courtes, ont les six derniers articles élargis; le corselet, très court, a les angles antérieurs nullement saillants, très arrondis; les élytres sont fortement rebordées à la base; les 4 tibias antérieurs sont légèrement arqués. La saillie intercoxale est assez large, obtuse; le métasternum n'est pas plus court que celui des *Cnodalon*. Le faciès de cet insecte est celui d'une très petite *Camaria*.

Cleomis violaceipes, n. sp.

Long. 9 à 10 mill. — Oblongo-ovatus, convexus, æneus, valde nitidus, pedibus purpureis, cyaneo mixtis; capite brevi, parce punctato, inter oculos transversim sulcatulo et utrinque impressiusculo, his paulo emarginatis, labro lato, brevi, palpis maxillaribus articulo ultimo lato, oblique securiformi; antennis prothoracis basin vix attingentibus, articulis 6 ultimis latioribus, ultimo longiore; prothorace elytris angustiore, longitudine duplo latiore, antice haud angustato sed lateribus cum angulis rotundatis, his cum basi fortiter marginatis, antice lateribus tantum marginatis, basi fortiter bisinuato, angulis posticis acutiusculis, dorso fere lævi, ad latera paulo impressiusculo; scutello cupreo aut violaceo, triangulari, lævi; elytris ad humeros paulo elevatis, sat rotundatis, postice vix ampliatis, apice obtusis, dorso punctato-lineatis, lævibus, margine laterali fere sulcato et apice intus subtiliter carinulato; subtus fere lævis, genubus cyaneis.

Notes from the Leyden Museum, Vol. XV.

Hab. Bornéo (S. Müller et Schwaner); Bornéo occ.: Sambas (Dr. J. Bosscha). — Trois exemplaires du Musée de Leide.

Cleomis opaculus, n. sp.

Long. 12 mill. — Oblongo-ovatus, convexus, æneus, capite prothoraceque nitidis, elytris parum nitidulis; capite subtiliter punctulato, antennis medium prothoracis attingentibus; prothorace elytris angustiore, valde transverso, lateribus sat marginatis, antice cum angulis rotundatis, postice leviter sinuatis, dorso sat subtiliter sat dense punctato, angulis posticis sat acute productis; scutello planiusculo, impresso; elytris ad humeros rotundatis, postice vix ampliatis, dorso substriato-punctatis, striis vix impressis, punctis apice obsolescentibus, intervallis planis, indistincte punctulatis, 8^o apice sat acute carinato; subtus fusco-metallescens, subtiliter punctulatus, pedibus valde nitidis, tibiis antice levissime arcuatis.

Hab. Singapore (Raffray). — Ma collection.

Bien distinct du précédent par la taille et la coloration à peine brillante des élytres.

Asbolodes, n. g.

Corpus ovatum, subgibbosum. Epistoma antennarum basin superans. Prothorax elytris angustior, lateribus obsoletissime undulatus. Elytra sat brevia, humeris obliquis, valde elevatis. Oculi a prothorace distantes. Antennæ prothoracis basin fere attingentes, articulis 4 ultimis dilatatis. Scutellum ogivale. Epipleuræ basi sat latæ, postice paulatim angustiores. Processus intercoxalis latus, valde obtusus. Mesosternum parum concavum, lateribus haud elevatis, prosternum inter coxas sat latum, impressum, apice brevissime dentiforme. Pedes validi, sat magni.

Ce nouveau genre est très voisin des *Cyrtosoma* dont il a bien le faciès, mais l'épistôme n'est pas aussi court, les 4 derniers articles des antennes sont dilatés, le mésosternum est peu impressionné et la saillie prosternale très courte.

Notes from the Leyden Museum, Vol. XV.

Asbolodes humerosus, n. sp.

Long. 10 mill. — Ovatus, convexus, elytris fere gibbosis, fuscus, subopacus, elytris vix nitidulis, humeris politis, nitidis; capite sat lato, dense rugosulo-punctato, clypeo arcuatim impresso, labro lato, brevi, oculis transversis, sat convexis; antennis basi sat gracilibus, articulo 3^o quarto vix longiore; prothorace transverso, elytris valde angustiore, transverso, antice paulo ampliato et cum angulis rotundato, margine antico haud emarginato, fere recto, lateribus postice levissime sinuatis, indistincte undulatis, dorso dense sat subtiliter punctato, basi marginato et utrinque sinuato, angulis rectis; scutello plano, late ogivali, lævi; elytris brevibus, ad humeros obliquatis et fortiter plicato-elevatis, postice paulo ampliatis, apice obtusis, dorso leviter punctato-substriatis, intervallis planissimis, lævibus; subtus lævis, metapleuris parallelis, pedibus punctato-rugosis, femoribus apice sat clavatis, tibiis anterioribus apice paulo incurvis, femoribus posticis elytrorum apicem attingentibus, tarsis subtus pilosis, articulo ultimo ceteris conjunctis æquali.

Hab. Bornéo (Schwaner). — Un seul exemplaire du Musée de Leide.

Le faciès de cet insecte est celui du *Cyrtosoma atrum* Dej. mais le chaperon est bien moins court, l'épistôme indistinct, les angles antérieurs du corselet sont bien plus arrondis, les épaules fortement relevées, le mésosternum à peine creusé.

Camaria malayana, n. sp.

Long. 25 mill. — Oblonga, convexa, postice leviter ampliata, æneo-metallica, nitida, capite prothoraceque paulo minus nitidis; capite dense sat subtiliter punctato, sutura clypeali sat impressa, medio recta, utrinque arcuatim fortiter antice producta, margine antico late obsolete sinuato, labro antice fortiter punctato et ciliato, antennis prothoracis basin vix attingentibus, piceis, articulis 4 ultimis

Notes from the Leyden Museum, Vol. XV.

lterioribus, ferrugineis, 8° nono paulo longiore; prothorace elytris valde angustiore, valde transverso, antice parum attenuato, lateribus fere rectis, subtiliter marginatis, angulis anticis rotundatis, dorso sat subtiliter, lateribus dense, disco laxè punctato, basi utrinque leviter longe sinuato, utrinque sat subtiliter marginato, angulis posticis sat retrorsum acutis; scutello lævi, apice rotundato; elytris oblongis, ad humeros angulatis, postice leviter ampliatis, apice sat acutis, dorso fortiter punctato-striatis, striis latis, opacis, punctis densatis, intervallis subtiliter alutaceis, modice convexis, basi, extus et præsertim apice magis convexis; subtus vix nitidula, abdomine dense subtiliter coriaceo, pedibus validis, rugoso-punctatis, articulo ultimo longissimo.

Hab. Bornéo (Schwaner). — Un seul exemplaire du Musée de Leide.

Ressemble à la *C. spectabilis*, de la Chine, en diffère par le corselet finement et moins densément ponctué, moins rétréci en avant, les élytres à stries ponctuées, le dessous du corps presque mat et les tarses plus robustes.

Amarygmus pulchridorsis, n. sp.

Long. 9 mill. — Ovatus, convexus, nitidus, aurichalceus, capite prothoraceque cœruleo et purpurino mixtis, elytris basi et apice, medio latius cyaneo transversim fasciatis, his fasciis purpurino marginatis; capite subtiliter punctato, antice transversim sulcato, oculis valde approximatis, antennis fuscis, sat gracilibus, corporis medium attingentibus, apicem versus parum crassioribus, articulo 3° quarto dimidio longiore; prothorace basi elytris haud angustiore, valde transverso, antice valde angustato, lateribus a basi arcuatis, dorso subtiliter dense punctato, basi vix bisinuato et obsolete biimpresso; scutello acute ogivali, indistincte punctulato; elytris sat breviter ovatis, punctis grossis seriatis, suturam versus vix substriatis, serie marginali basi et apice fere obsoleta, intervallis subtilissime sat dense punctulatis; subtus cum epipleuris et pedibus

Notes from the Leyden Museum, Vol. XV.

piceus, nitidus, abdomine basi subtiliter striolato, pectore lævi, pedibus sat magnis, tibiis posterioribus apice leviter incurvis.

Hab. Bornéo (S. Müller). — Un seul exemplaire du Musée de Leide.

Forme et sculpture du *convexus* Pasc., d'Australie, mais un peu plus court et plus convexe, d'une coloration très différente, avec les pattes plus grandes, les tibias postérieurs arqués à l'extrémité.

Amarygmus iridipennis, n. sp.

Long. 10 mill. — Ovato-ellipticus, convexus, nitidus, capite viridi-metallico et purpurino mixto, prothorace viridi-metallico, transversim purpurino fasciato, elytris vittulis brevibus cœruleo-viridibus et purpureis alternatim ornatis; capite dense subtiliter punctato, antice transversim sulcato, oculis modice approximatis, antennis gracilibus, fuscis, medium corporis paulo superantibus, articulo 3^o duobus sequentibus conjunctis fere æquali; prothorace brevi, longitudine duplo latiore, elytris parum angustiore, antice valde angustato, sat subtiliter sat dense punctato; scutello triangulari, acuto, punctulato; elytris ovatis, punctato-striatis, intervallis vix convexiusculis, subtiliter dense punctatis, apice magis elevatis; subtus cum pedibus nigro-fuscus, nitidus, prosterno inter coxas lato, utrinque leviter striato, apice fere rotundato, mesosterno punctato, medio anguste lævi, abdomine subtiliter dense strigosulo.

Hab. Sumatra. — Ma collection.

Forme du *spectabilis*, mais plus elliptique, d'une coloration et d'une sculpture très différentes. La coloration rappelle celle de quelques *Ceropria* et *Pseudeumolpus*.

Amarygmus aeneolus, n. sp.

Long. 8 mill. — Breviter ovatus, sat fortiter convexus, valde nitidus, æneus, capite prothoraceque paulo cœrulescentibus et elytris levissime cœruleo micantibus; capite obscuriore, subtilissime punctato, antice profunde trans-

Notes from the Leyden Museum, Vol. XV.

versim sulcato, epistomate labroque ferrugineis; antennis fuscis, gracilibus, medium corporis attingentibus, apicem versus vix crassioribus, articulo 3^o quarto dimidio longiore; prothorace elytris sat angustiore, brevissimo, antice valde angustato, lateribus a basi rotundatis, dorso fere polito, basi leviter bisinuato, angulis posticis sat obtusis; scutello triangulari, lævi; elytris breviter ovatis, basi truncatis, sat fortiter lineato-punctatis, linea suturali striata, secunda postice substriata, intervallis subtiliter densissime punctatis; subtus cum pedibus fusco-metallescens, lævis, pedibus sat gracilibus, tibiis levissime arcuatis.

Hab. Bornéo et Sumatra (S. Müller). — Trois exemplaires du Musée de Leide.

Forme du *convexus*, d'Australie, mais un peu plus convexe et d'une coloration différente ainsi que la sculpture.

Amarygmus variicolor, n. sp.

Long. 5 à 6 mill. — Elliptico-ovatus, sat convexus, cyaneus, nitidus, plus minusve purpureo tinctus; capite subtilissime punctulato, antice fortiter sulcato, oculis valde approximatis; antennis fuscis, medium corporis superantibus, gracilibus, apicem versus paulo crassioribus, articulo 3^o quarto longiore; prothorace minus brevi, elytris parum angustiore, antice valde angustato, lateribus arcuatis, dorso dense subtiliter punctato, basi levissime bisinuato, angulis sat obtusis; scutello ogivali, lævi; elytris ovatis, punctulato-striatis, striis primis paulo profundioribus, intervallis vix convexiusculis, vix distincte punctulatis, striis 2 externis basi et apice obsolescentibus; subtus cum pedibus piceus aut fuscus, fere lævis, abdomine basi vix striolato-punctulato, pedibus gracilibus, tibiis posterioribus levissime arcuatis.

Hab. Bornéo (S. Müller et Schwaner). — Trois exemplaires du Musée de Leide.

Forme des *A. tuberculiger* et *hydrophiloides*, en diffère par la taille bien plus faible, les élytres plus ovalaires, à stries beaucoup moins profondes, à intervalles presque plans.

Notes from the Leyden Museum, Vol. XV.

Amarygmus sanguinans, n. sp.

Long. 8 à 10 mill. — Oblongus, sat fortiter convexus, fuscus, sat nitidus, elytris obscuro-sanguineo plus minusve plagiatis, interdum fere obsolete, capite et prothorace antice interdum sanguineis; capite dense punctato, oculis valde approximatis, antennis fuscis, parum gracilibus, medium corporis attingentibus, articulis 6 ultimis paulo latioribus, articulo 3^o sequenti vix longiore; prothorace transverso, a basi antice angustato, lateribus arcuatis, valde deflexis, dorso dense punctato, basi utrinque vix sinuato; scutello fere ogivali, fere lævi; elytris ovatis, postice attenuatis, punctato-striatis, striis modice impressis, punctis postice obsolete, intervallis planis, indistincte punctulatis; subtus fuscus, vix nitidulus, obsolete punctulatis, femoribus (genubus exceptis) sanguineis.

Hab. Java (Blume), Sumatra (S. Müller) et Bornéo (S. Müller). — Cinq exemplaires du Musée de Leide.

Espèce remarquable par sa coloration et sa forme allongée, convexe; les élytres ont parfois tout le disque rougeâtre, ou bien cette couleur forme 4 taches vaguement indiquées.

Dietysus anthracinus, n. sp.

Long. 12 mill. — *D. ovoideo* simillimus, sed paulo minor et angustior, magis nigrans, antennis longioribus, medium elytrorum superantibus, apice haud crassioribus, auriculis antennariis minus elevatis, oculis infra minus expansis, prothorace angusto, vix transverso, angulis anticis sat acute productis, elytris angustioribus, paulo subtilius striatis, striis sat subtiliter sed evidenter punctulatis, intervallis planissimis, subtilissime punctulatis, pedibus nigris, tibiis posticis leviter arcuatis.

Hab. Bornéo. — Ma collection.

Strongylium truncatipenne, n. sp.

Long. 12 mill. — Sat elongatum, convexum, capite prothoraceque æneo-viridulis, vix nitidulis, elytris æneis,

nitidissimis; capite summo valde rugoso, inter oculos breviter sulcatulo, antice dense punctato, lobis antennariis sat elevatis, oculis magnis, antice valde approximatis, antennis parum gracilibus, medium corporis haud attingentibus, fuscis, articulis 4—10 paulo latioribus, compressis, dense punctatis, articulo 3^o quarto longiore, 4^o sat elongato; prothorace transverso, elytris angustiore, lateribus ante angulos et cum angulis antice rotundatis, dorso fortiter punctato-rugoso, basi et antice marginato et polito, angulis posticis rectis; scutello triangulari, polito; elytris parum elongatis, postice paulo ampliatis, apice oblique leviter sinuatis, angulo externo dentiformi, dorso punctato-striatis, extus usque post medium foveolatis, juxta suturam leviter triimpressis, basi extus levissime plicatulis, intervallis lævibus, vix convexiusculis, 3^o basi longe, 5^o 6^o que breviter costulatis, humeris elevatis et paulo incrassatis; subtus virescens, pectore fortiter punctato, abdomine subtilissime striolato-punctato, segmento ultimo apice utrinque impresso et leviter sinuato, pedibus cyaneis, elongatis, gracilibus, punctatis.

Hab. Bornéo occ.: Sambas (Dr. J. Bosscha). — Un seul exemplaire du Musée de Leide.

Ressemble beaucoup au *foveolatum* mais la coloration est assez différente, les yeux sont bien plus rapprochés, les antennes moins longues, les élytres sont légèrement impressionnées vers la suture, un peu échancrées à l'extrémité avec une petite dent externe et les pattes sont un peu plus grêles.

Strongylium lanigerum, n. sp.

Long. 16 mill. — Oblongum, postice parum ampliatus, valde convexum, fusco-ænescens, nitidum, sat longe et sat dense griseo-villosum, capite prothoraceque parum nitidis, fere subopacis; capite dense rugosulo-punctato, inter oculos impressiusculo, his sat approximatis, antennis fuscis, basin prothoracis paulo superantibus, basi gracilibus, articulo 3^o elongato, 5 ultimis latis, clavam compressam

Notes from the Leyden Museum, Vol. XV.

efficientibus; prothorace elytris valde angustiore, a basi antice angustato, lateribus fere rectis, antice fere truncato, crasse marginato, angulis obtusissimis, dorso dense punctato-rugoso, basi late sinuato, tenuiter marginato, angulis productis paulo acutis; scutello triangulari-oblongo, acuminato, lævi; elytris ad humeros rotundatis, postice valde declivibus, apice obtusis, seriatim grosse punctatis, postice paulo substriatis, punctis decrescentibus, intervallis parum dense punctatis, prope suturam sat late pluriimpressis; subtus cum pedibus paulo cyanescens et longe villosum, punctulatum, pedibus sat magnis, tibiis medio densius villosis, prosterno lato, plano.

Hab. Bornéo occ.: Sambas (Dr. J. Bosscha). — Deux exemplaires du Musée de Leide.

Ressemble un peu au *S. villosum*, de l'Inde, mais plus grand, plus convexe, d'une coloration différente et remarquable par sa villosité laineuse; le corselet est bien plus long, les élytres sont bien plus fortement ponctuées et sont impressionnées le long de la suture. Les antennes, bien plus courtes, sont comprimées et élargies à l'extrémité.

Strongylium gibbicolle, n. sp.

Long. 17 mill. — Elongatum, subparallelum, crassum sed dorso planiusculum, æneo-cupreolum, nitidum, capite prothoraceque viridi-æneo tinctis, elytris anguste cœruleo marginatis, subtus cum pedibus cyanescens, pectore medio paulo purpurino, femoribus rufis, apice cyaneis; capite summo obscuro, dense punctato, antice nitidiore, viridi-æneo, subtilius punctato, oculis vix separatis, magnis; antennis sat gracilibus, medium corporis fere attingentibus, fuscis, apicem versus leviter crassioribus, articulo 3^o quarto parum longiore; prothorace elytris valde angustiore, vix transverso, dorso bigibboso, medio intus fortiter excavato, fere lævi, undique valde marginato; scutello acute triangulari, medio impresso; elytris elongatis, ad humeros paulo obliquatis, apice obtusis, grosse seriato-punctatis, punctis basi fere foveolatis, apice multo minoribus, inter-

Notes from the Leyden Museum, Vol. XV.

vallis transversim leviter plicatulis, postice subcostatis, lævibus, intervallo suturali medio biimpresso, serie 1^a depressa, minus grosse punctata; subtus fere læve, prosterno inter coxas canaliculato, apice depresso et punctato, pedibus sat elongatis, femoribus apice et tibiis punctulatis.

Hab. Bornéo: Sintang. — Un seul exemplaire du Musée de Leide, présenté par M. W. Albarda.

Voisin des *S. imbrum* et *gratum*, remarquable par la double gibbosité occupant tout le corselet qui est fendu et largement excavé au milieu, les deux saillies paraissant former une tenaille.

Strongylium tenuipes, n. sp.

Long. 13 mill. — Elongatum, convexum, postice attenuatum et leviter compressum, fusco-cœrulescens, capite prothoraceque fere opacis, elytris nitidulis, femoribus posticis basi late rufis; capite dense punctato-rugoso, antice brevi, sutura clypeali profunda, clypeo recte truncato, labro lato, brevi, truncato, oculis magnis, valde convexis, fere contiguis, antennis filiformibus, medium corporis paulo superantibus, articulo 2^o brevissimo, 3^o quarto fere æquali, ultimis 5—11 fere æqualibus; prothorace paulo transverso, elytris valde angustiore, antice angustato, lateribus fere medio angulatis, dorso dense punctato-rugoso, basi et antice marginato, linea dorsali vix impressa; scutello triangulari-ovato, dense punctulato; elytris elongatis, ad humeros obliquatis, apice oblique truncatis et breviter dentatis, dorso seriatim foveolatis, foveolis post medium valde decrescentibus, intervallis convexis, lævibus, usque ad medium transversim leviter plicatulis; pectore lateribus punctato, abdomine subtiliter punctato, pedibus elongatis, gracilibus, femoribus apice paulo crassioribus, tarsis gracillimis.

Hab. Bornéo occ.: Sambas (Dr. J. Bosscha). — Un seul exemplaire du Musée de Leide.

Ressemble beaucoup au *S. japanum* Mars., mais plus bleuâtre, avec les yeux plus gros, plus rapprochés, le front non sillonné et les antennes plus longues, plus grêles

Notes from the Leyden Museum, Vol. XV.

ainsi que les pattes; en outre, les élytres sont tronquées obliquement à l'extrémité, avec l'angle interne formant une petite dent assez pointue.

Oedemeridae.

Ananca impressiuscula, n. sp.

Long. 16 à 21 mill. — Elongata, convexa, canellina, parum nitida, subtiliter pubescens; capite vix perspicue punctulato, mandibulis apice fuscis, oculis valde approximatis, antennis parum gracilibus, elongatis, $\frac{3}{4}$ corporis attingentibus, articulo 1^o elongato, 2^o sat elongato, 3^o sequenti paulo longiore; prothorace elytris valde angustiore, antice leviter ampliato, lateribus fere rectis, ad angulos anticos tantum rotundato, his sat fortiter angulatis, dorso dense sat subtiliter punctato, basi medio sat late impresso, antice et lateribus impressiusculo, margine basali sat acute elevato, ad angulos posticos paulo exserto; scutello dense punctulato, apice obtuso; elytris elongatis, ad humeros sat rotundatis, apice obtusis, sutura et utrinque costulis 3 sat elevatis, intervallis subtiliter dense granulatis; subtus dense subtiliter coriacea; ♂ minor, prothorace basi profundius impresso, elytrorum costulatis parum elevatis, apice obsoletis, ♀ major, prothorace basi minus, antice lateribus magis impresso, elytris fortius costulatis.

Hab. Bornéo occ.: Sambas (Dr. J. Bosscha). — Un seul exemplaire du Musée de Leide. — (Pulu Penang: ma collection).

Ressemble à l'*A. sculpticollis* Fairm., de Sumatra, mais d'une coloration roussâtre avec les yeux plus rapprochés, le 2^e article des antennes plus long, le corselet plus étroit, à côtés presque droits, non sinués à la base, le disque moins sillonné, les élytres plus fortement rugueuses, non terminées par une épine.

Paris, 30 Mai 1892.

NOTE IV.

A REVIEW OF THE GENUS RHIPIDURA,
WITH AN ENUMERATION OF THE SPECIMENS IN
THE LEYDEN MUSEUM

BY

J. BÜTTIKOFER.

When occasionally looking over the specimens of the genus *Rhipidura* in our Museum, there were so many puzzling questions which could not be satisfactorily dissolved at once, that I decided to a comparative revision of the whole genus. This revision is not solely based upon our own material, but also on the rich and well-arranged collection in the British Museum, which I had the good fortune to look through during my recent visit to London, and amongst which I found several species, which were published after the issue of Dr. Sharpe's excellent Catalogue of the Muscicapidae. As in this catalogue the synonymy of each species is well-established up to the date of its issue, it would be of very little value to give it here once more, and I restricted, therefore, all synonymical remarks to those species about which I differ from the author of the Catalogue and to the species which were published afterwards.

As to the limits of the genus, I agree with Dr. Sharpe

Notes from the Leyden Museum, Vol. XV.

in including the genera *Leucocerca* and *Sauloprocta*; moreover I found, and Dr. Sharpe adheres now to this opinion, that the genus *Neomyias*, established in his catalogue, has to be reunited with *Rhipidura*.

The genus, as it is understood in this review, contains the considerable number of 75 species, of which five are described here as new.

Although I was fully aware of the difficulties to meet with, I made an attempt to find a natural order in which to place the numerous species of this genus. For this purpose I divided the whole genus into a group with small (13 cm. or less) and another with large bill (more than 13 cm.). This classification is, I am sorry to say, not quite perfect, as the last species of the small-billed group, *R. albiventris* from the Philippines, would, in fact, rather belong to the second group. On account of its red back, however, which forms a characteristic of a section of the first group, and its near relationship to *R. cyaniceps*, I prefer to close the first group with it, rather than placing it at the head of the second. On the other hand I placed in my second group, for similar reasons, a species with short bill, *R. pectoralis*, as it has no other relationship whatever with the short-billed group. The further classification of the species of each group into well-defined sections and subsections will be learnt from the key to the species, and I am pleased to say that but a very few species had to be placed, as it were by force, into one or other section of the genus.

I cannot close these few introductory lines without any expression of gratitude, especially to the address of Dr. Sharpe, for the kindness with which I was allowed to examine the rich materials in the British Museum and to increase the number of our species of this genus with such which were hitherto wanting in the series of the Leyden Museum.

Notes from the Leyden Museum, Vol. XV.

- b⁴*. Upper and lower surface black. *fallax* 13.
b'''. With a white superciliary stripe.
a⁴. Tail uniform *atra* 14.
b⁴. Tail broadly tipped with white *albicollis* 15.
b''. Above gray, earthy brown or chocolate-brown, abdomen either pale chestnut, fulvous or white.
a'''. No black patch on lower throat, which is, as well as the chest, white with dusky brown streaks.
a⁴. Outer web of two pairs of outermost tail-feathers white on its terminal half, back earthy brown *layardi* 16.
b⁴. Only the outermost tail-feather with the outer web white, back tinged with chestnut brown.
a⁵. Dusky streaks on chest numerous, broad *erythronota* 17.
b⁵. Dusky streaks on chest narrower and less numerous. *rufilateralis* 18.
b'''. Lower throat black, forming a more or less complete cross-band.
a⁴. Chest, breast, flanks and abdomen pale chestnut. *hyperythra* 19.
b⁴. Chest below the cross-band uniform white, unscaled.
a⁵. Upper surface ashy gray *albilimbata* 20.
b⁵. Upper surface earthy brown *personata* 21.
c⁴. Chest white with black centres, giving it a scaly appearance.
a⁵. Upper surface smoky brown. *kubaryi*. 22.
b⁵. Upper surface chocolate brown. *melanolaema*. 23.
b. Lower back always rusty red or cinnamon.
a'. Forehead black.
a''. Tail entirely cinnamon.
a'''. Lores black *phoenicura* 24.
b'''. Lores white *opisterythra* 25.
b''. Tail brown, red at extreme base, all the tail-feathers, except the innermost pair, tipped with white *squamata* 26.
b'. Forehead white, rest of upper surface cinnamon-rufous. *elegantula* 27.
c'. Forehead red.
a''. Tail-feathers tipped with white or ashy white.
a'''. Dark parts of tail black or dark brown.
a⁴. Entire throat black, leaving only a nar-

Notes from the Leyden Museum, Vol. XV.

- row space on the chin and a moustachial streak white.
- a*⁵. Feathers on the abdomen unstriped . *uraniae* 28.
- b*⁵. Feathers on the abdomen with a dark shaft-streak *astrolabi* 29.
- b*⁴. Upper throat white.
- a*⁵. A black patch on lower throat, chest scaly, the black feathers being edged with white.
- a*⁶. Upper back olive-brown, contrasting with the lower, which is rich cinnamon-red *rubrofrontata* 30.
- b*⁶. Upper surface rich brown with a reddish tinge *versicolor* 31.
- c*⁶. Upper surface cinnamon-rufous . . *semirubra* 32.
- b*⁵. Lower throat black, chest uniform . *russata* 33.
- b*^{'''}. Dark parts on tail brown, more or less tinged with pearly gray.
- a*⁴. Mantle olive-brown, contrasting with the red back.
- a*⁵. Chest scaly, the black feathers being edged with white.
- a*⁶. Entire basal half of tail-feathers red *rufifrons* 34.
- b*⁶. Extreme base of tail-feathers only edged with red. *dryas* 35.
- b*⁵. Chest below the black throat-patch uniform white *semicollaris* 36.
- b*⁴. Mantle rufous, like back and rump.
- a*⁵. A narrow black patch on lower throat. *hamadryas* 37.
- b*⁵. Black throat-patch very broad, reaching nearly up to the chin which is white, as also a broad moustachial streak, running down along the sides of the black throat *celebensis* 38.
- c*⁵. No black patch on lower throat, which is ashy fulvous *rufidorsa* 39.
- b*^{''}. Two basal thirds of tail-feathers pale chestnut, terminal third black, three outermost pairs narrowly edged and tipped with fulvous *leysmanni* 40.
- c*^{''}. Tail sepia brown, extreme base, outer web of outermost tail-feathers, and broad tips to all the tail-feathers deep rusty red.
- a*^{'''}. Shafts of tail-feathers dark brown, wing 7,5 cm. *lepida* 41.

Notes from the Leyden Museum, Vol. XV.

- a*⁴. Chest-band distinctly spotted with white.
- a*⁵. No white tips on the tail-feathers.
- a*⁶. Tail uniform sooty black *cinerea* 58.
- b*⁶. Outer web of outermost tail-feather white on its terminal half. *lenzi* 59.
- b*⁵. Tips to two or three outer tail-feathers white.
- a*⁶. Abdomen ochraceous. *hoedti* 60.
- b*⁶. Abdomen white *vidua* 61.
- b*⁴. Chest-band uniform or with some very narrow white shaft-streaks.
- a*⁵. Secondaries not or only faintly edged with white.
- a*⁶. Abdomen ochraceous *setosa* 62.
- b*⁶. Abdomen white *kordensis* 63.
- b*⁵. Secondaries broadly edged with white.
- a*⁶. Abdomen white *obiensis* 64.
- b*⁶. Abdomen pale ochraceous. *finachi* 65.
- b*^{''}. Upper surface tinged with olive brown or earthy brown, never pure ashy gray.
- a*^{'''}. Upper throat white.
- a*⁴. Only the outermost pair of tail-feathers tipped with white *assimilis* 66.
- b*⁴. Two outermost tail-feathers tipped with white.
- a*⁵. A distinct gray chest-band with white lanceolate shaft-streaks to the feathers, white tip to the outermost tail-feather less than an inch. *isura* 67.
- b*⁵. No distinct gray chest-band, white tips to tail-feathers much more than an inch in length *rufiventris* 68.
- c*⁴. Four outermost tail-feathers tipped with white. *javanica* 69.
- d*⁴. No distinct white spots on tail-feathers, which are brown, becoming paler towards the tips. *pectoralis* 70.
- e*⁴. Five outer pairs of tail-feathers tipped with white. *nigritorquis* 71.
- b*^{'''}. Upper throat black, some feathers tipped with white.
- a*⁴. A black pectoral band, three outer tail-feathers tipped with white *auricularis* 72.
- b*⁴. No black pectoral band, five outer pairs of tail-feathers tipped with white. *albifrontata* 73.

- c". Upper surface, chin, throat and chest glossy black.
- a". Inner secondaries broadly edged with white, feathers on chest centred with oval white spots *cockerelli* 74.
- b". No white edgings to secondaries, chest unspotted *melanoleuca* 75.

1. *Rhipidura flabellifera* (Gm.).

A nearly adult specimen, with some spots on the wing-coverts still rufous, from New Zealand.

2. *Rhipidura bulgeri* Layard.

Two adult specimens from Noumea, New Caledonia.

3. *Rhipidura albiscapa* Gould.

Three specimens from "Australia" and two from New South Wales.

4. *Rhipidura diemenensis* Sharpe.

Rhipidura saturata (nec Salvad.) Sharpe, Cat. B. Br. Mus. IV, p. 311 (1879).

Rhipidura diemenensis Sharpe, Ibis, May 1879, p. 368.

Rhipidura sharpei Ramsay, Proc. Linn. Soc. N. S. Wales, 1879, p. 318.

Hab. Tasmania.

5. *Rhipidura preissi* Cabanis.

Rhipidura preissi Cab. Mus. Hein. I, p. 57 (1850); Sharpe, Cat. B. Br. Mus., IV, p. 310; id. P. Z. S. 1881, p. 387.

Hab. Western Australia.

6. *Rhipidura pelzelni* Gray.

Hab. Norfolk Island.

7. *Rhipidura brenchleyi* Sharpe.

One specimen from Aneitum, New Hebrides.

Notes from the Leyden Museum, Vol. XV.

8. *Rhipidura cervina* Ramsay.

Rhipidura cervina Ramsay, Proc. Linn. Soc. N. S. Wales, 1879, p. 340.

Rhipidura macgillivrayi Sharpe, P. Z. S. 1881, p. 789, pl. 67.

Hab. Lord Howe's Island.

9. *Rhipidura nebulosa* Peale.

Three specimens from Samoa.

10. *Rhipidura spilodera* Gray.

Hab. Banks Islands.

11. *Rhipidura verreauxi* Marie.

An adult male from Noumea, New Caledonia.

12. *Rhipidura fuliginosa* (Sparrm.).

One specimen from New Zealand.

13. *Rhipidura fallax* Ramsay.

Rhipidura fallax Ramsay, P. Z. S. 1884, p. 580.

Hab. Astrolabe Range, S. E. New Guinea.

This species seems to differ from *R. atra* Salvad. in wanting the white patch above the eye.

14. *Rhipidura atra* Salvadori.

Rhipidura atra Salvad. Ann. Mus. Civ. Genova, VII, p. 922 (1875); XII, p. 324 (1878).

Rhipidura brachyrhyncha (nec Schleg.) Sharpe, Cat. B. Br. Mus. IV, p. 316 (description of adult male); Salvad. (partim) Ann. Mus. Civ. Genova, XIV, p. 500 (1879); id. Orn. Pap. II, p. 72 (1881).

Adult male and female slaty black with a silky white patch above the eye. Young birds seem to have a red plumage, as Count Salvadori (Ann. Mus. Civ. Genova, VII, p. 922) mentioned a black bird with some red feathers, which latter may be considered the remnants of the immature plumage. The same seems to be the case with *R. flabellifera* (see Sharpe, Cat. Birds, IV, p. 309).

Adult male and female from Arfak, collected by Bruyn

Notes from the Leyden Museum, Vol. XV.

on February 13th and 15th 1876. The female has some rusty red feathers on the breast and near the base of the tail.

Unfortunately for the synonymy of this and other species, a great confusion was caused by the statement of Beccari's, that the specimens of *R. atra* Salvad. were nothing but the black males and the specimens of *R. brachyrhyncha* auct. recent. (nec Schleg.) the red females of one and the same species, which ought to bear, as the older, the name *R. brachyrhyncha*. Although this point of view be agreed with by our most eminent recent Ornithologists, I feel, after a near examination of the matter, quite unable to share this opinion. It is a rather strange supposition that, in only one species of such a large genus, male and female would be so strikingly different in color, the more as in our Museum as well as in the series treated of by Salvadori in the second volume of his Ornithologia delle Papuasie, one of the black specimens is said to be a female. The same is, moreover, the case with the only specimen of this species, found in the collections of the British Museum, being a black female from the Arfak Mountains.

Very curious is the fact that the red birds, which were considered, first by Dr. A. B. Meyer and afterwards by Dr. Sharpe and Count Salvadori, to belong to *R. brachyrhyncha* Schleg., are quite different from this latter species. They cannot be identified either with *R. brachyrhyncha* nor *R. atra*, of which they were believed to be the females, but belong to a quite different species, which is identical with *R. cinnamomea*, described by Dr. A. B. Meyer in Zeitschr. f. Ges. Orn. 1886, p. 17, pl. III, fig. 3.

15. *Rhipidura albicollis* Vieillot.

Rhipidura albicollis Vieill. N. Dict. d'Hist. Nat. XXVII, p. 13.

Rhipidura atrata Salvad. Ann. Mus. Civ. Genova, XIV, p. 203 (1879).

Rhipidura vidua (nec Salvad.) Schleg. in Snelleman, Sumatra Exp. Aves, pl. II (1884).

Three specimens from the Indian Continent and one

Notes from the Leyden Museum, Vol. XV.

(the type of *R. vidua*, figured in the above mentioned plate) from the Highlands of Padang, collected by the Dutch Expedition through Sumatra.

Our Sumatran specimen is not specifically different from *R. albicollis* from the Continent, of which I had the good fortune to get 75 specimens in the British Museum to compare with, amongst them one from Perak. One might say that, as a rule, the Sumatran specimens, of which I saw one in the British Museum, would have the white tips clearer white and longer than those from the Continent; I found, however, amongst the Indian birds enough specimens to form a series showing every degree of a gradation between *R. albicollis* and *atrata*, and the specimen from Perak certainly would belong to the latter, if it might be maintained as a distinct species. (See also Sharpe, on Birds from Perak, P. Z. S. 1887, p. 435, and Salvadori, Uccelli di Birmania, Ann. Mus. Civ. Genova, 1887, p. 590).

16. *Rhipidura layardi* Salvadori.

A male and two females from Viti Levu.

17. *Rhipidura erythronota* Sharpe.

A male from Vanua Levu.

18. *Rhipidura rufilateralis* Sharpe.

A male from Taviuni, Fiji Islands.

19. *Rhipidura hyperythra* Gray.

Rhipidura hyperythra Sharpe, Birds of New Guinea, Vol. II, pl. 33.

A specimen from Aru (von Rosenberg) and two from N. W. New Guinea.

20. *Rhipidura albilimbata* Salvadori.

Two males from Karons, N. W. New Guinea.

Notes from the Leyden Museum, Vol. XV.

21. *Rhipidura personata* Ramsay.

Two females, collected by Kleinschmidt on the Island Kandavu, Fiji group.

22. *Rhipidura kubaryi* Finsch.

An adult bird from Ponapé.

23. *Rhipidura melanolaema* Sharpe.

Hab. Vanikoro, New Hebrides.

24. *Rhipidura phoenicura* Müll. & Schleg.

Three specimens from Java, amongst which the two types, and a fourth specimen from Borneo.

25. *Rhipidura opistherythra* Sclater.

Rhipidura opistherythra Sclat. P. Z. S. 1883, p. 197; Sharpe, Birds of New Guinea, Vol. II, pl. 29.

Hab. Timor Laut.

26. *Rhipidura squamata* Müll. & Schleg.

Eight specimens: Adult male and female from Banda (types, voyage S. Müller), a male from Koor (von Rosenberg), a female from Matabello (von Rosenberg), male and female from Waaigama, Mysol (Hoedt), a female from one of the small islands on the west-coast of Waigiu (Bernstein) and a specimen without indication of locality.

27. *Rhipidura elegantula* Sharpe.

Rhipidura elegantula Sharpe, N. L. M. 1879, p. 21.

The typical specimen, collected by Hoedt on the island of Lettie. A second specimen, from the island of Dammer, I had the opportunity to see in the British Museum.

28. *Rhipidura uraniae* Oustalet.

Rhipidura uraniae Oust. Bull. Soc. Phil. Paris, Mars 1881.

Rhipidura atrigularis Rehw. J. f. O. 1885, p. 110.

An unsexed specimen, acquired from Verreaux 1865, and erroneously said to come from Australia.

Notes from the Leyden Museum, Vol. XV.

This specimen agrees very well with the short description of *R. atrigularis* given by Dr. Reichenow, with the exception of its smaller size which is somewhat inferior even to the measurements of the typical specimen of *R. uraniae*. From all its red-fronted allies this species is very easily distinguished by its black throat, leaving only the chin and a rather narrow moustachial streak white.

Crown, nape, hind neck, mantle and upper back earthy brown, forehead and a superciliary stripe, lower back, rump and upper tail-coverts cinnamomeous, lesser wing-coverts and scapulars like the mantle, median and greater sepia-brown, edged with earthy brown and tipped with pale fulvous, forming a double row of this color, quills sepia-brown, the outer edge fringed with paler brown; tail black, all the feathers broadly tipped with pure white, extreme base of all the tail-feathers rufous, the centre ones to a greater extent than the outer pairs; lores, sides of face, ear-coverts and sides of neck as well as the whole throat and upper chest black, the black feathers on the lower end of this large gular patch edged with white, giving the chest a scaly appearance, the chin as well as a narrow line running from it along the cheeks onto the sides of the neck and joining the sides of the chest, white. Lower chest dirty white, breast and abdomen pale fulvous, deepening into a more intense fulvous on abdomen, vent, flanks and under tail-coverts. Thighs cinnamon, under wing-coverts white, edge of wing fulvous, inner lining of the quills ashy. Bill brown, with base of lower mandible white, feet pale brown. Wing 6,5 cm., innermost tail-feathers 7,9, outermost 5,7, tarsus 1,8, culmen 1,1.

The pale tips to the median and greater wing-coverts seem to me to indicate a certain stage of immaturity.

The typical specimen of this species is stated to come from the Marianne Islands (Freycinet), while the type of *R. atrigularis* has been collected on the Pelew Islands (Kubary).

Notes from the Leyden Museum, Vol. XV.

29. *Rhipidura astrolabi* Oustalet.

Rhipidura astrolabi Oust. Bull. Soc. Phil. Paris, Mars 1881.

Hab. Vanikoro, New Hebrides.

30. *Rhipidura rubrofrontata* Ramsay.

Rhipidura rubrofrontata Ramsay, Proc. Linn. Soc. N. S. Wales, 1881, p. 23; Salvad. (partim) Orn. Pap. III, p. 532 (1882); Sharpe, Birds New Guinea, Vol. II, pl. 26 (1886).

An adult male from Guadalcanar, Solomon Islands.

This species is very closely allied to *R. rufifrons*, but at once distinguished by the lesser extent and darker tinge of red on the base of the tail-feathers as well as by the pure white instead of ashy white tips to all the tail-feathers.

31. *Rhipidura versicolor* Hartl. & Finsch.

Hab. Island of Uap, Mackenzie group.

32. *Rhipidura semirubra* Sclater.

Hab. Admiralty Islands.

33. *Rhipidura russata* Tristram.

Rhipidura russata Tristr. Ibis, 1879, p. 440; id. 1882, p. 142; Salvad. Aggiunte Orn. Pap. p. 78 (1890).

Rhipidura rubrofrontata Salvad. (partim) Orn. Pap. III, p. 533.

Hab. San Christoval, Solomon Islands.

34. *Rhipidura rufifrons* (Lath.).

Nine specimens from different parts of Australia, amongst which there is one from Melbourne with all the tail-feathers tipped with rufous instead of ashy white.

35. *Rhipidura dryas* Gould.

Rhipidura dryas Sharpe, Birds of New Guinea, Vol. II, pl. 32.

One specimen from Coburg Peninsula, Australia.

36. *Rhipidura semicollaris* Müll. & Schleg.

Besides the three typical specimens from Timor and one

Notes from the Leyden Museum, Vol. XV.

from Samao, all four collected by S. Müller, the series contains another specimen from Timor (von Rosenberg) and one from Ombaai, the most eastern island of the Flores group.

37. *Rhipidura hamadryas* Sclater.

Rhipidura hamadryas Sclat. P. Z. S. 1883, p. 54; Sharpe, Birds of New Guinea, Vol. II, pl. 30.

An adult female from Timor Laut, collected by H. O. Forbes.

38. *Rhipidura celebensis*, n. sp.

An unsexed specimen, collected by Teysmann at Macassar, Celebes.

Very closely allied to *R. semicollaris* from the Timor group, but easily distinguished by the darker tinge of the earthy brown parts of the upper surface and the broader black band across the lower throat and chest.

Crown, hind neck, fore-part of mantle, lesser wing-coverts and thighs dark earthy brown, fore-head, hinder part of mantle, whole back, rump and upper tail-coverts rufous, quills and greater wing-coverts sepia-brown, edged with the color of the crown, tail blackish with the upper surface iron gray on both webs of the innermost pair and on the outer webs of the other pairs, the outer web of all the tail-feathers, except the outermost pair, red near the base, tips to all the tail-feathers white, more broadly so towards the outermost pair, on which the white of the tip is running at some distance towards the base on the edge of the outer web. Lores, sides of face, lower throat and chest black, the very lowest part of the latter with white edgings to the feathers, the very broad throat-patch separated from the black cheeks and ear-coverts by a white streak, extending from the chin onto the sides of the chest, breast and abdomen pure white, flanks, vent and under tail-coverts tinged with fulvous, under wing-coverts white, inner edge of quills ashy whitish. Bill dark

Notes from the Leyden Museum, Vol. XV.

brown, white at the base of the lower mandible, feet dark brown. Wing 6,6 cm., centre tail-feathers 8,5, outermost pair 6,2, tarsus 2, culmen 1,3.

39. *Rhipidura rufidorsa* Meyer.

A male from Karons, North West New Guinea, Coll. Bruyn.

40. *Rhipidura teysmanni*, n. sp.

An unsexed specimen, collected by Teysmann at Macassar, Celebes, 1878.

This species belongs to the group with the forehead, back and base of tail-feathers cinnamon-red, and *R. rufifrons* from Australia may be considered its nearest ally. From this latter, as well as from the other species of the mentioned group, it differs principally in the red of the basal part of the tail being much more widely distributed, fully occupying the two basal thirds and being as plainly visible on the under surface as on the upper, while in all the other species the tail, when closed, hardly will show any red region beyond the under tail-coverts.

Crown, sides of head, the neck and upper part of mantle olive-brown, front, back, rump, flanks, thighs, upper and under tail-coverts, the two basal thirds of all the tail-feathers above and below, cinnamon red. Upper wing-coverts and quills sepia-brown, the first broadly edged with olive-brown, the latter, with the exception of the outermost, broadly fringed with cinnamon, innermost secondaries olive-brown, both webs fringed with cinnamon, under wing-coverts fulvous, quills very broadly edged on the inside with vinaceous, especially the secondaries; the terminal third of tail-feathers about an inch in length in the innermost and somewhat less in the outer pairs, sepia-brown, for about half their length fringed on the inner and outer webs with the color of the basal two thirds, the two innermost pairs very narrowly, the outermost broadly tipped with ashy fulvous. The shafts of the tail-

Notes from the Leyden Museum, Vol. XV.

feathers have the color of the accompanying parts of their webs, but the red on the basal part is running, though not very far, into the black terminal third. Chin and upper throat pure white, a rather narrow black bar without any white edgings to the feathers, across the chest, centre of breast and abdomen pale fulvous with a rather whitish tinge, rest of under surface cinnamon. Bill blackish, whitish at base, feet pale brown. Wing 6,9 cm., centre tail-feathers 8, outermost 6, tarsus 1,9, bill from front 1,2.

I am much pleased to name this fine species after its discoverer, the late Mr. Teysmann, who, besides his well-known botanical investigations throughout the Indian Archipelago, spent much time in enriching the ornithological collections of the Leyden Museum.

41. *Rhipidura lepida* Hartl. & Finsch.

An adult female from Pelew (Museum Godeffroy).

42. *Rhipidura brachyrhyncha* Schlegel.

Rhipidura brachyrhyncha Schleg. Ned. Tijdschr. voor de Dierk. IV, p. 42 (1873).

Rhipidura rufa Salvad. Ann. Mus. Civ. Genova, VII, p. 923 (1875); Sharpe, Cat. Birds Br. Mus. IV, p. 323; Salvad. Orn. Pap. II, p. 71 (1881).

A female, collected by von Rosenberg at Hattam, North West New Guinea, 1870.

As I have already pointed out when treating of *R. atra*, the birds considered to be *R. brachyrhyncha* by Meyer, Salvadori and Sharpe are not identical with *R. brachyrhyncha* Schleg., and it is by mistake that Salvadori states to have examined the type of the latter, which is still preserved unstuffed in the magazines of the Leyden Museum. Most likely Salvadori took our stuffed female of *R. meyeri* mihi for the type of Schlegel's *R. brachyrhyncha*, as this specimen bears the latter name in his hand-writing. Although Schlegel's description of *R. brachyrhyncha* is very

Notes from the Leyden Museum, Vol. XV.

clear, and sharply pointing to the characters which make this species a near ally of *R. lepida*, I redescribe it here in extenso:

Head, mantle and lesser wing-coverts dusky fulvous, superciliary streak and nuchal region tinged with ferrugineous, back, rump and upper tail-coverts deep ferrugineous, quills and greater wing-coverts sepia-brown, both margined with the color of the back, giving the whole wing a rusty appearance. Tail dark brown, with glossy red shafts, extreme base of the centre tail-feathers and of the outer web of the others ferrugineous, with which color the outer webs of all the tail-feathers are fringed nearly down to the end; tips of all the tail-feathers at the length of about half an inch deep bay, making the tail, when seen from underneath, like that of *R. lepida*, with the exception that in the latter the red tips are longer and the red is running along the whole outer edge of the outermost pair, while in *R. brachyrhyncha* the outermost pair is not edged with red exteriorly. The underparts of the bird are pale grayish fulvous, more intensely fulvous on breast and abdomen, and cinnamomeous on the under tail-coverts. Under wing-coverts fulvous, inner lining of the quills vinous bay, bill very short and pale, lower mandible, with the exception of the darker tip, white, feet and claws pale yellow. Wing 6,4 cm., tail 8,7, tarsus 1,9, culmen 1,1.

The essential differences between *R. brachyrhyncha* Schl. and *R. meyeri* mihi (= *R. brachyrhyncha* auct. nec Schl.) are to be sought for in the color of the tail, which in the first species is dark brown with red base and red tips, while in the second the centre tail-feathers are entirely black, the outer entirely cinnamomeous.

43. *Rhipidura cinnamomea* ¹⁾ Meyer.

Rhipidura brachyrhyncha (nec Schleg.) Meyer, Sitzb. k. Akad. d. Wiss. Wien, LXIX, p. 501 (1874); Sharpe, Cat. B. Br. Mus. IV,

¹⁾ See the observations about this species antea, under the heads *R. atra* and *brachyrhyncha*.

p. 316 (description of the female); Salvad. Ann. Mus. Civ. Genova, XIV, p. 500 (1879); Orn. Pap. II, p. 72 (♀).

Rhipidura cinnamomea Meyer, Zeitschr. f. ges. Orn. III, p. 17, pl. III, fig. 3 (1886).

A female collected by Bruyn, and an unsexed specimen collected by Woelders, both from Arfak, N. W. New Guinea.

General color cinnamon, somewhat paler below than above, especially on chin and throat, which are pale fulvous. Crown and hind neck tinged with olive; quills and wing-coverts dark brown, edged with the color of the back, under wing-coverts and inner edge of quills cinnamon. Three outermost pairs of tail-feathers uniform cinnamon, the fourth pair cinnamon on the outer, black on the inner web, the two innermost pairs entirely black. Bill very short, the bristles reaching beyond the tip, upper mandible black, lower white, feet pale flesh-color. Wing 7.1 cm., tail 8, outermost pair 6, tarsus 2, culmen 1.2.

In the distribution of the colors on the tail-feathers this species agrees with the two following: *R. cyaniceps* and *albiventris*, but there seems to occur some individual difference, probably due to age. While in our above described specimen the fourth tail-feather has the inner web entirely black, the other specimen has one of the feathers of the fourth pair nearly almost black on the inner web, while the other feather of the same pair has only a basal part of the inner web black and the whole rest cinnamomeous. In the specimen erroneously described by Dr. Meyer as *R. brachyrhyncha* (Sitzb. Wien, LXIX, p. 501) the black on the tail-feathers seems, on the other hand, to be more widely distributed, as it occupies not only the whole outer web of the fourth pair, but also the edge of the inner web of the third and the base of the inner web of the second, leaving only the first (outermost) pair entirely red. Dr. Meyer's type is the first male which is as yet known of this hitherto wrongly understood species.

Salvadori (Aggiunte Orn. Pap. 1890), considering *R. cinnamomea* to differ specifically from what he says to be

Notes from the Leyden Museum, Vol. XV.

the female of *R. brachyrhyncha*, believes the first named form to be the female of the black *R. fallax* Ramsay, thus forming a case analogue to his *R. brachyrhyncha*, in which the red female is also said to belong to a black male (*R. atra*).

44. *Rhipidura cyaniceps* (Cass.).

One specimen from the Philippine Archipelago.

45. *Rhipidura albiventris* (Sharpe).

One specimen from Guimaras, Philippine Archipelago.

46. *Rhipidura fusciorufa* Sclater.

Rhipidura fusciorufa Sclat. P. Z. S. 1883, p. 197, pl. XXVII.

Two specimens from the Tenimber group of Islands.

This is the first of a group of three large-billed species, which are in some way related with the small-billed forms *R. cinnamomea*, *R. cyaniceps* and *R. albiventris*, having the two centre tail-feathers uniform black, while the outer pairs are pale, at least on their outer webs, and never tipped with rufous or white. Upper surface earthy brown, head darker, a white spot above the eye, median and greater wing-coverts and secondaries, especially the innermost, broadly margined with pale rufous, two innermost pairs of tail-feathers black, the next pair black with rufous edge and tip, three outermost pairs entirely pale rufous, chin and throat white, chest-feathers gray at base, with very large white tips, giving the whole chest a white appearance like in the preceding species, rest of under surface, including the under wing-coverts, pale rufous.

47. *Rhipidura diluta* Wallace.

Rhipidura diluta Wall. P. Z. S. 1863, p. 491.

One specimen from Flores.

Upper surface grayish brown, forehead much darker, wing-coverts and secondaries edged with dark rufous,

Notes from the Leyden Museum, Vol. XV.

three central pairs of tail-feathers uniform brown, next pair with paler tip, two outermost pairs dirty whitish, darker at the base of the inner web, chin, throat and a narrow line from the nostril above the eye white, chest and sides of body ashy brown, rest of lower surface including the under wing-coverts ashy fulvous. Bill narrower than in the allied species.

48. *Rhipidura sumbawensis*, n. sp.

Two specimens from Sumbawa, presented by Mr. van Lansberge, 1882.

Closely allied to *R. diluta*, but with much broader bill, with the upper surface much paler brown, the quills edged with very clear rusty red, the three outermost pairs of tail-feathers more fulvous, less ashy than in *R. diluta*, and the lower surface much more strongly tinged with fulvous.

Forehead and lores blackish, crown rufous brown, whole back and rump pale earthy brown with no grayish tinge at all, upper tail-coverts darker; upper wing-coverts like the back, median and greater as well as the primary coverts externally edged with rufous, quills brown, broadly margined with clear rusty red. Three innermost pairs of tail-feathers uniform sepia-brown, paler than in *R. diluta*, fourth pair broadly tipped with fulvous, fifth pair fulvous nearly up to the base, the outermost pair entirely fulvous with much paler outer web. Throat and a streak from the nostril above the eye white, duller in younger specimens, rest of under surface pale fulvous, somewhat tinged with ashy; under wing-coverts and thighs uniform clear fulvous, inner edge of quills vinous red. Bill broad, black, paler at base of lower mandible, feet flesh-color, iris black. Wing 8 cm., tail 8,7, outermost pair 7,3, bill 1,4, tarsus 2. A probably younger specimen is smaller, the wing having 7,4, the tail 8 cm.

The comparison of our Sumbawa specimens with four specimens of *R. diluta* from Flores in the British Museum,

Notes from the Leyden Museum, Vol. XV.

amongst which the type of the species, convinced me that the first really belongs to a new, hitherto overlooked species.

49. *Rhipidura threnothorax* Müll. & Schleg.

Rhipidura threnothorax Müll. & Schleg. Verh. Land- en Volkenk. p. 185 (1839—44); Meyer, Sitzb. k. Akad. d. Wiss. Wien, LXIX, p. 212 (1874); Sharpe, Cat. B. Br. Mus. IV, p. 325 (1879); Salvad. Orn. Pap. II, p. 54 (1881).

Rhipidura fumosa Schleg. Ned. Tijdschr. voor de Dierk. IV, p. 42 (1873); Salvad. Orn. Pap. II, p. 56 (1881).

Rhipidura ambusta Ramsay (teste Sharpe and Salvadori).

This species, with which I unite, in accordance with Dr. Sharpe, *R. fumosa* Schleg., is easily distinguished from all its congeners with white-spotted breast by its uniform sooty black tail. I have before me a series of five specimens, each in a different dress, which, as I think, we have to consider as so many different stages of age, of which it will be useful to give here a short description.

a. First stage: Young female from Jobi, collected by von Rosenberg, April 23rd 1869 (type of *R. fumosa* Schleg.). Above dark olive-brown, hind neck, mantle and back strongly tinged with rusty, rump, upper tail-coverts, abdomen, vent, thighs, under tail-coverts and tail sooty black; wing-coverts and quills dark smoky brown, under wing-coverts somewhat paler; chin, throat and a superciliary stripe white; chest, breast and flanks pale olive-brown, the upper chest with numerous hidden, small whitish spots, which, I think, will be the beginnings of the larger and purer white spots of the more developed stages of plumage. The bill is also showing a mark of immaturity, the lower mandible being white with a partially black tip, while it is, as a rule, pure white in the adult bird. The upper mandible as well as the feet are in all stages blackish brown. The wing, compared with the more advanced stages, is very short, measuring only 7 cm., tail 9, tarsus 2,1, culmen 1,5.

This or a perhaps somewhat more advanced stage is

Notes from the Leyden Museum, Vol. XV.

described by Dr. A. B. Meyer in the above cited Sitzungsberichte.

b. Second stage: Female, collected by S. Müller, together with the typical specimen at the bay Lobo, S. W. New Guinea. General color above and below considerably much paler than in specimen *a*, probably owing to its having, as a stuffed specimen, been much more exposed to the light. The white on chin and throat extending upon the cheeks, the chest grayish olive instead of olive-brown, each feather bearing, in its centre, a large cordiform dirty white spot of four millimetres in width. No black at all on the chest, the outermost of the under wing-coverts edged with white, lower mandible white with a blackish mark near the tip. Wing 7,5 cm., tail 9,4, tarsus 2,2, culmen 1,5.

c. Third stage: Female, collected by Bernstein at Sorong, January 20th 1865. Differs from the preceding specimen in having the head and back less tinged with rufous, in being more ashy olive on chest and breast and in having the cordiform spots much purer white and on most of the feathers, especially near the throat, encircled with black. Under wing-coverts as in the previous specimen. Hardly any black at the tip of lower mandible. Wing 8 cm., tail 9,2, tarsus 2, culmen 1,7.

d. Fourth stage: An unsexed specimen from New Guinea (Frank, 1873). Similar to the former specimen, but having the white spots on the chest very large with all the surrounding parts of each feather entirely black, while many of the grayish olive breast-feathers, especially on the centre of the breast, bear concealed white, cordiform spots without black surrounding. Under wing-coverts very conspicuously tipped with white, and some of the outermost lesser wing-coverts also tipped with white. Lower mandible entirely white. Wing 8 cm., tail 9,8, tarsus 2,3, culmen 1,7.

e. Fifth stage(?). Type of the species (♂), collected by S. Müller at the bay Lobo, S. W. coast of New Gui-

nea. Similar to the former specimen, but the white spots on the black chest very much smaller, hardly two millimetres broad, and drop-shaped, very narrow at the base, becoming broader and round at the end, none of them cordiform as in the preceding specimens. Some of these white drop-shaped spots are found, partially visible, partially hidden, on the ashy olive feathers of the breast. Lower mandible entirely white. Wing 8 cm., tail 8,6, tarsus 2,2, culmen 1,5.

It is not without some hesitation that I unite this specimen, the type of the species, with the four former ones, the difference in form and size of the white spots on the chest being so very striking; but on the other hand the large-spotted specimen, described above as the second stage, is found by S. Müller together with the small-spotted typical specimen, and considering, moreover, the fact that in the allied *R. maculipectus* the small and the large form of white spots are found in one and the same individual, it would be rather venturous to base a new species upon the difference in size of the white chest-spots only.

The British Museum contains a specimen similar to stage four from Salwati, another from "New Guinea" and one from the Astrolabe Mountains, which latter is the form described as *R. ambusta* by Ramsay.

50. *Rhipidura rosenbergi*, n. sp.

A female, collected by von Rosenberg at Wonoembaai, Aru, agrees with the preceding species in the olive-brown upper surface, the uniform sooty black tail, the entirely white throat and the black, white-spotted chest, but differs from it in having below the white throat the whole under surface sooty black, almost as intense as the chest, and not only is the chest, but also the breast, spotted with white. These two latter characteristics make it a near ally of *R. maculipectus*, from which it is, however, distinguished by the olive-brown upper surface, the uniform black tail and the entirely white throat.

Notes from the Leyden Museum, Vol. XV.

Crown, hind neck and mantle and back olive-brown, the latter somewhat tinged with rufous, the rump darker, upper tail-coverts, tail, flanks, abdomen, thighs and under tail-coverts sooty black, the outermost tail-feathers with a very slight indication of a white tip; lesser wing-coverts and some of the median blackish, tipped with white, rest of the wing-coverts and all the quills smoky brown, narrowly fringed with paler brown on the outer webs; under wing-coverts sooty brown, tipped with white; chin, cheeks, entire throat, front and a broad superciliary stripe pure white, the latter bordered at its upper edge with deep black, strongly contrasting with the olive-brown crown; lores, a streak underneath the eye, and ear-coverts sooty black; chest and breast pure black with a large heart-shaped, pure white spot towards the end of each feather, only the upper region of the chest the white spots are wanting on some feathers, while they are smaller and more drop-shaped on the others. Bill black, lower mandible white, blackish at the tip, feet dark brown. Wing 8 cm., tail (incomplete) 9,8, outermost pair 8, tarsus 2,4, culmen 1,5.

This form might be considered to be a very old stage of *R. threnothorax*, in which the whole lower surface had become entirely black, but the black tip to the lower mandible shows that the bird cannot be very old, moreover the species *threnothorax* is not known as yet to live on the Aru Islands. In the British Museum I had the opportunity of seeing a specimen from Aru, which is somewhat paler brown on breast and abdomen than our typical specimen, and I think not to be wrong when considering the lower surface in the immature stages to be darker than in *R. threnothorax*, and more approaching the young of *R. maculipectus*.

51. *Rhipidura maculipectus* G. R. Gray.

Rhipidura maculipectus G. R. Gray, P. Z. S. 1858, p. 176; Sharpe, Cat. B. Br. Mus. IV, p. 326; Salvad. Orn. Pap. II, p. 56 (1881).

Notes from the Leyden Museum, Vol. XV.

Rhipidura saturata Salvad. Ann. Mus. Civ. Genova, XIV, p. 497 (1879); Orn. Pap. II, p. 58 (1881).

Four specimens (males and females) from Ara (von Rosenberg, 1865), a male from Haruko, a small island east from Amboina (Hoedt, 1863), one specimen from Mysol (von Rosenberg, 1866), two specimens from Salwati (Bernstein, 1863), a young female, the type of *R. saturata* Salvad., from Salwati (Bernstein, 1863) and two males from Sorong, New Guinea (Bernstein, 1864).

In accordance with Dr. Sharpe I consider the female specimen in our Museum, described as *R. saturata* by Count Salvadori, to be the immature stage of *R. maculipectus*, a stage showing very much analogy with that of *R. threnothorax*, described as *R. fumosa* by Schlegel. This analogy consists especially in the uniform color of the plumage, the shortness of the wing (7,2 cm. instead of 8,2), the black tip to the lower mandible and the nearly unspotted chest, while the white-tipped tail, the black throat and the sooty brown general color at once indicate its belonging to *R. maculipectus*. *R. fumosa* and *R. saturata* once admitted as the young stages of *R. threnothorax* and *R. maculipectus*, the idea must entirely be abandoned that the form I described above under the name of *R. rosenbergi*, after all might turn out to be some immature stage of *R. maculipectus*.

52. *Rhipidura tenebrosa* Ramsay.

Rhipidura tenebrosa Ramsay, Proc. Linn. Soc. N. S. Wales, VI, p. 835 (1881); Salvad. Orn. Pap. III, p. 535.

Hab. Solomon Islands.

53. *Rhipidura leucothorax* Salvadori.

Rhipidura episcopalis Salvad. Ann. Mus. Civ. Genova, VI, p. 311 (1874); Sharpe, Birds of New Guinea, Vol. II, pl. 26.

Rhipidura episcopalis Ramsay, Proc. Linn. Soc. N. S. Wales, II, pp. 371 and 377 (1878).

Four specimens from Sorong and Andai, N. W. New Guinea.

Notes from the Leyden Museum, Vol. XV.

This species has, as a rule, the chin black like the throat, but one of our specimens, as well as the only specimen of this species in the British Museum has the chin white.

54. *Rhipidura euryura* S. Müller.

Leucocerca euryura Salvad. Ucc. di Borneo, p. 136 (1874).

Neomyias euryura Sharpe, Cat. B. Br. Mus. IV, p. 342 (1879).

Three typical specimens from Java (Müller and Boie); a fourth specimen from Java and another from Sumatra, in which latter island this species was not known to be found as yet.

This species is easily known by its nearly uniform bluish gray color, having only the eyebrow, abdomen, under tail-coverts and a very small tip to the outermost tail-feather white.

55. *Rhipidura perlata* S. Müller.

Male and female (types), collected by S. Müller in Sumatra, and three specimens from Borneo.

These specimens, though all apparently adult, differ very much in size, the wing of the smallest specimen from Borneo being 7,9 cm., the largest 8,6, which is also the size of the typical specimens from Sumatra.

Whole upper surface bluish gray, chin, throat, chest and flanks sooty black, breast, abdomen and under tail-coverts white, the throat provided with narrow white shaft-streaks and the chest with large drop-like spots of the same color. Tail black, the three outer pairs of feathers very broadly tipped with white.

56. *Rhipidura tenkatei* Büttikofer.

The typical specimen from the island of Rotti (see N. L. M. 1892, p. 205). This species differs from *R. buruensis* by the large white tips to the two outermost pairs of tail-feathers.

Notes from the Leyden Museum, Vol. XV.

57. *Rhipidura buruensis* Wallace.

Seven specimens, collected by Hoedt and Teysmann on the island of Bouru. This species is easily known by its ochraceous abdomen and under tail-coverts and the dirty white outer webs of the outermost pair of tail-feathers, while the rest of the tail is uniform sooty brown.

58. *Rhipidura cinerea* Wallace.

Hab. Ceram.

This species is distinguished by its uniform sooty black tail.

59. *Rhipidura lenzi* Blasius.

Rhipidura lenzi Blas. J. f. O. 1883, p. 145 (Celebes); Meyer, Isis, I, p. 26 (1884); Forbes, P. Z. S. 1884, p. 431 (Amboyna); Salvad. Aggiunte alla Orn. Pap. pt. II, p. 77 (1890).

Two males from Ceram(?) with the manuscript name of *R. forsteni* Temm. ¹⁾, and a female from Amboyna, collected by Hoedt in 1866.

All three specimens agree in their coloration with the description as given by Dr. Blasius, only would it be better to choose, for the general color, the expression *saturate cinerea* instead of *cinereo-nigra*. Dr. Blasius' bird is also a little larger than the three specimens in our Museum, but the individual difference in size in this group being rather considerable, this larger size is of hardly any specific value.

Type specimen, said to be from

North Celebes	wing 9,3 cm. tail 9,0 cm.
Specimens said to be from Ceram	» 8,9 » » 8,4 »
Specimen from Amboyna	» 8,6 » » 8,2 »

Another specimen from Amboyna, collected by H. O. Forbes and now in the British Museum, is of the same size, the wing measuring 8,5, the tail 8,2 cm.

1) Salvadori, Orn. Pap. II, p. 64, erroneously identified *R. forsteni* with *R. cinerea* Wall.

Dr. A. B. Meyer, in his above quoted paper, develops the reasons for which he does not believe in Celebes being the habitat of *R. lenzi*, and not having seen any specimens of this species himself, he utters some doubts as to its specific value, the more as it is closely allied to *R. buruensis* and *R. cinerea*. I fully share Dr. Meyer's doubts as to the localities and believe Amboyna to be the only well-ascertained habitat of this species. Whether our two Ceram birds, which were acquired more than fifty years ago, are really from Ceram or not, is hard to say, and therefore I should not lay too much weight upon this locality, which, moreover, is the habitat of the very closely allied species *R. cinerea* Wall. This latter species, the type and only known specimen of which I examined in the British Museum, has the whole tail plain sooty black (all the twelve tail-feathers are present), whereas *R. lenzi* differs from it in having the terminal half of the outer web of the outermost tail-feather white.

R. lenzi in the British Museum differs from the specimens in our Museum in having the tip of the inner web of the outermost tail-feather also white. Count Salvadori, l. c., leans to the opinion that *R. lenzi* might be identical with *R. cinerea*, but for the above mentioned reason, I hardly think that this opinion will turn out to be correct.

60. *Rhipidura hoedti*, n. sp.

An adult female from the Island of Lettie, Timor group of islands, collected by the Dutch Naturalist Hoedt, May 24th 1866.

Closely allied to *R. tenkatei*, from which it differs, however, by the longer white tips to the two outermost pairs of tail-feathers and the pure white throat. It stands also near *R. isura*, from Australia, but is so much darker that it cannot be confounded with this latter species.

Above dark gray, darker on the head and nearly black on the front, back faintly tinged with brown, upper tail-coverts and tail sooty brown, tip of the outermost pair

Notes from the Leyden Museum, Vol. XV.

at the length of an inch pure white, the outer web white up to the distance of an inch from the base; next pair with a large white spot at the tip, edged on the outer web with the color of the basal part; third pair with a very narrow wedge-shaped spot on the outer web near the shaft. Wings brown, coverts and quills edged with olive-brown, greater and median coverts tipped with white, forming a double row of white, inner secondaries edged and tipped with white, as in *R. setosa*, under wing-coverts ashy fulvous, inner edge of quills vinous gray, sides of head blackish, a distinct spot above the eye silky white, chin and throat pure white, chest pale ashy gray, with well-defined, somewhat black edged, lanceolate spots of white, flanks uniform ashy gray, centre of breast dirty white, abdomen and vent very pale ochre, under tail-coverts pure white, thighs dark gray, spotted with white. Bill entirely black, feet sooty brown. Wing 8,4 cm., tail 8,7, outermost pair 7,7, tarsus 1,8, culmen 1,5.

61. *Rhipidura vidua* Salvadori.

Hab. Koffiau.

62. *Rhipidura setosa* (Quoy & Gaim.).

A great series from the Waigiou Archipelago (Guebeh, Gagic, Waigiou, Salwati, Mysol), from New Guinea (Bay Lobo, types of *R. gularis* Müll.), Seleh, Sorong, Dorey, Andai, Warbusi, Doktor) and the Bay of Geelvink (Meosnoum and Jobie).

This species is characterized by its ashy gray upper surface with darker head, the sooty brown upper tail-coverts and by the black tail having the outermost pair and sometimes also the next one tipped with white, the white reaching up halfway to the base on the outer web of the outermost pair, further by the superciliary streak, whole chin and throat, centre of breast and under tail-coverts, being pure white; chest ashy gray, some of the feathers with white shaft-streaks, abdomen buffy white.

Notes from the Leyden Museum, Vol. XV.

63. *Rhipidura kordensis* Meyer.

Rhipidura kordensis Meyer, Sitzb. k. Akad. Wien, LXX, p. 201 (1874).

Three specimens from Soëk, Geelvink Bay.

Closely allied to the large-billed *R. setosa*, from which it is distinguished by the black head and chest, and the white (instead of fulvous) breast, abdomen and under tail-coverts.

64. *Rhipidura obiensis* Salvadori.

Rhipidura obiensis Salvad. Orn. Pap. II, p. 59.

Rhipidura sp. Bernst. Ned. Tijdschr. Dierk. II, p. 135 (1865).

Nine specimens from Obi major and one from Obi lattu (Obi Islands).

Closely allied to the white-bellied *R. kordensis*, but having the chest more ashy, and the secondaries broadly edged with white on the outer web. From *R. finschi*, with which it agrees as to these white edgings, it is distinguished by its white instead of fulvous breast, abdomen and under tail-coverts.

65. *Rhipidura finschi* Salvadori.

Rhipidura finschi Salvad. Orn. Pap. III, p. 532.

A male from New Britain, and another from Duke of York Island.

66. *Rhipidura assimilis* Gray.

Six specimens from the Key Islands, three from Matabello and one, erroneously as I think, said to be from Mysol (von Rosenberg).

This species is at once distinguished from the other species of the *setosa*-group by a well-defined white superciliary stripe, beginning at the nostrils and ending at some distance behind the eye, while the other species have only a patch of silky white above the eye.

Notes from the Leyden Museum, Vol. XV.

67. *Rhipidura isura* Gould.

Rhipidura isura Gould, P. Z. S. 1840, p. 174.

Rhipidura setosa (nec Quoy & Gaim.) Sharpe, Cat. Birds Br. Mus. IV, p. 329; (?) Salvad. Orn. Pap. II, p. 61.

An immature specimen from Australia, received from Gould, and an adult specimen from Port Essington, collected by Cockerell.

This species is undoubtedly fully entitled to specific rank, as it is easily distinguished from *R. setosa* by its dull earthy brown upper surface, by the white shaft-streaks on the much paler and narrower chest-band, and more especially by the greater extent of the white color on the tail-feathers. Amongst *R. setosa* the specimens with the greatest extent of white on the outermost tail-feathers (2 cm.) are those from the island of Guebeh, which birds have the white tips to the second pair much more strongly developed than those from any other locality. In the Australian specimens the white tip to the outermost pair is still longer, measuring 2,4 cm., and the white on the outer web is reaching nearer up to the base than in *R. setosa*. The white tip to the second pair is not longer than in our birds from Guebeh (1,5 cm.), but the third pair is, though very narrowly and in much worn tails not at all, tipped with white, a peculiarity already stated by Gould, whereas in none of our 30 specimens of *R. setosa* the slightest indication of such a tip can be found.

Our immature specimen represents a very interesting stage of plumage, having the upper surface earthy brown, the feathers of the back narrowly, the upper tail-coverts very broadly tipped with fulvous, wing-coverts and quills earthy brown, the median and greater coverts broadly tipped with buffy white, thus forming a double bar; tips to primary coverts as well as broad edges and tips to the secondaries dull white.

68. *Rhipidura rufiventris* (Vieill.).

Three specimens, the three types of *R. ochrogastra*

Notes from the Leyden Museum, Vol. XV.

Müll. & Schl., and two others, presented by von Rosenberg, all five specimens from Timor.

Upper surface gray, head black with a white patch above the eye, chin and throat white, feathers of the chest gray at the basal half, and so largely tipped with white that hardly any gray can be seen except on the sides of the chest on which the feathers are less tipped with white, breast, flanks, abdomen and under tail-coverts pale fulvous, tail black, outer web of first pair white nearly up to the base, inner web as well as the whole second pair tipped with white at more than an inch in length, the third pair with a narrow white tip near the shaft.

69. *Rhipidura javanica* (Sparrm.).

Eight specimens from Java, two from Sumatra, two from Banka, three from southern Borneo and a not fully adult specimen from "Indes orientales".

This is the only large-billed form with uniform gray chest, having the four outermost pairs of tail-feathers tipped with white. The immature female is much paler brown than the adult and has the wing-coverts broadly tipped with fulvous. The chest-band is very narrow and, even as the sides of the breast, earthy brown instead of gray.

70. *Rhipidura pectoralis* (Jerdon).

An adult male from the Indian Continent.

71. *Rhipidura nigritorquis* Vigors.

Five specimens from the Philippines and the Sulu Archipelago.

This large white-throated species is easily recognized by its very narrow black chest-band and having all but the innermost pair of tail-feathers broadly tipped with white.

72. *Rhipidura auricularis* De Vis.

Rhipidura auricularis De Vis, Ibis, 1891, p. 30.

Hab. Musgrave Range, S. E. New Guinea.

Notes from the Leyden Museum, Vol. XV.

73. *Rhipidura albifrontata* Franklin.

Three specimens from the Indian Continent.

Distinguished from all its congeners by the very broad pure white front and superciliary stripes, leaving only a narrow space on the centre of the crown black; throat black, rest of under surface white. All but centre tail-feathers broadly tipped with white, outer web of outermost pair entirely white.

74. *Rhipidura cockerelli* Ramsay.

Rhipidura cockerelli Ramsay, P. L. S. New South Wales, VI, p. 181 (1881); Sharpe, Birds of New Guinea, Vol. II, pl. 28.

Sauloprocta (?) *cockerelli* Salvadori, Orn. Pap. III, p. 531.

An adult male from Guadalcanar, Solomon Islands.

Upper surface, throat, chest and breast black, abdomen, under tail-coverts, numerous drop-shaped spots on the chest, a superciliary spot and the outer webs of inner secondaries pure white. Tail uniform black, nearly square.

75. *Rhipidura melaleuca* (Quoy & Gaim.).

Rhipidura tricolor (Vieill.) N. Dict. d'Hist. Nat. XXI, p. 490; Sharpe, Cat. B. Br. Mus. IV, p. 339.

Sauloprocta melaleuca Salvad. Orn. Pap. II, p. 48.

A series of about sixty specimens from Morotai, Halmahera, Ternate, Tidore, Motir, Batchian, Obi, Bouru, Amboyna, Ceram, Goram, Poulo Padjang, Aru, Mysol, Guebeh, Waigiou, New Guinea, Meosnoum, Duke of York, Cape York.

This species being only black and white, I fully agree with Count Salvadori, who rejected the oldest name (*tricolor*) in favor of the second (*melaleuca*), but on the other hand I could not find sufficient reason to separate it generically from *Rhipidura*.

Two nestlings of this species differ from the adult in having the upper wing-coverts narrowly tipped with brown and the superciliary streak as well as vent and under tail-coverts washed with fulvous.

Leyden Museum, September 1892.

Notes from the Leyden Museum, Vol. XV.

NOTE V.

UEBER
DAS VORKOMMEN DER MELLIVORA INDICA KERR
IM TRASCASPI-GEBIET

VON

EUG. BÜCHNER,Conservator am Zoologischen Museum der Kaiserl. Akademie der
Wissenschaften zu St. Petersburg.

Herr N. Sarudny, der in diesem Jahre seine Zoologischen Untersuchungen im russischen Trascaspi-Gebiete von Neuem aufgenommen hat, schickte unlängst an das Zoologische Museum der Kais. Akademie der Wissenschaften zu St. Petersburg unter anderen Objecten auch den Balg einer *Mellivora*-Art ein, welcher in der Tedshen-Oase (im Thale des Unterlaufes des Tedshen, in der Nähe von Kara-Bend) erbeutet worden war. Ueber diesen Fund habe ich sogleich der Kais. Akademie der Wissenschaften in der Sitzung von 27 Mai berichtet, und erlaube mir hier auf denselben zurückzukommen in Anbetracht des hohen Interesses, den derselbe in zoogeographischer Beziehung beanspruchen darf.

Nach eingehender Untersuchung erwies sich der von Herrn Sarudny eingeschickte Balg als zur Art *Mellivora indica* Kerr gehörig. Ich halte es zunächst für nöthig diese Identificirung näher zu begründen, zu welchem Zwecke ich hier kurz das Resultat eines Vergleiches dieses Exemplares aus Trascaspien mit den vorhandenen Beschreibungen und Abbildungen der indischen Art mittheile.

Die charakteristische Vertheilung der schwarzen und

Notes from the Leyden Museum, Vol. XV.

weisslichen Färbung auf dem Körper des Balges aus Transcaspien stimmt vollständig mit der Zeichnung der *M. indica* überein; auch die Linie, welche die auffallende scharfe Grenze zwischen der hellen Rückenfärbung und der einfarbigen schwarzen Färbung des ganzen Unterkörpers bildet, verläuft bei unserem Exemplare in ganz ähnlicher Weise, wie bei der indischen Art. Die helle Rückenfärbung unseres Exemplares stimmt gleichfalls mit den Beschreibungen derselben bei *Mellivora indica* überein, da die Färbung der Oberseite dieser letzteren beispielsweise von Jerdon (Mammals of India, p. 79) und Murray (The Vertebrate Zoology of Sind, p. 32) als »tawny white" oder »light gray", und von Blanford (The Mammals of British India, p. 176) gleichfalls als »light grey" oder »whitish grey" angegeben wird; jedenfalls hat diese helle Färbung auf der Oberseite meines Balges nichts gemein mit der sehr dunkelgehaltenen Rückenfärbung, wie sie Wolf (Zoological Sketches, II, tab. IX) auf seiner Abbildung der *Mellivora indica* gegeben hat und wie sie auch mit den Beschreibungen der indischen Zoologen im Widerspruche steht ¹⁾. Die weissliche Färbung des Rückens geht auch auf

1) Ich möchte noch bemerken, dass der in Rede stehende Balg aus Transcaspien, namentlich in der Färbung seines Rückens, ganz vorzüglich auf die Abbildung der *Mellivora leuconota* Selater (Proc. Zool. Soc. London, 1867, tab. VIII) passt; ganz ebenso trifft auf unser Exemplar auch eine spätere Bemerkung von Selater (Proc. Zool. Soc. London, 1871, p. 232) zu, laut welcher beim Originale der *Mellivora leuconota* der Hinterrücken mehr grau erscheint, während der Kopfplatte von beinahe rein weisser Färbung ist. Da *Mellivora leuconota* aus West-Africa stammt und sich nach späteren Untersuchungen von Selater von *Mellivora indica* kaum unterscheiden lässt, so gelangt dieser Forscher zum Schluss, dass die Gattung *Mellivora* wohl nur eine einzige Art aufzuweisen hat. Diese Schlussfolgerung kann nicht als richtige bezeichnet werden, denn wenn auch Selater die Identität der *Mellivora leuconota* mit *Mellivora indica* klargelegt hat, so ist er uns doch noch die Beweise schuldig geblieben, dass auch *Mellivora ratel* Sparrm. (= *Mellivora capensis* Desm.) von *Mellivora indica* specifisch nicht verschieden ist. Es wird jedenfalls erst künftigen Forschungen vorbehalten bleiben, die Frage über die artliche Selbstständigkeit des afrikanischen und des asiatischen Vertreters dieser Gattung zu lösen; sollte sich meine Voraussetzung bewahrheiten, dass nämlich das Verbreitungsgebiet der Gattung *Mellivora* ein zusammenhängendes ist, so würde dieser Umstand dafür sprechen, dass die verschiedenen, beschriebenen *Mellivora*-Arten conspezifisch sind.

den Schwanz über und nimmt den weitaus grössten Theil seiner Oberseite ein, doch bleibt bei unserem Exemplare die Schwanzspitze schwarz, ganz ebenso wie dieses nach Hardwicke (Transactions of the Linnean Society, IX, p. 115), Blanford und Anderen auch bei *Mellivora indica* der Fall ist. Auch in allen übrigen Charakteren, wie die sehr dünne Behaarung des Bauches, die sehr bedeutende Stärke der Krallen am Vorderfusse, das Fehlen des Wollhaares u. s. w., stimmt unser Exemplar aus Transcaspien vollständig mit *Mellivora indica* überein.

Was endlich der Grösse und Schwanzlänge unseres Balges anbetrifft, so weist derselbe eine Körperlänge (von der Nasenspitze bis zur Schwanzwurzel) von 680 mm. auf, neben einer Schwanzlänge (mit den Endhaaren gemessen) von 170 mm.; doch sind diese Maassangaben nur sehr approximative, da die Präparation und der jetzige Zustand des Objectes eine mehr oder weniger sichere Ausmessung desselben nicht ermöglicht. Nichtsdestoweniger zeigen uns doch diese Maasse, dass unser Exemplar auch in der Grösse und in Verhältniss der Schwanzlänge zur Körperlänge mit *Mellivora indica* übereinstimmt, da nach den Angaben von Hodgson, Jerdon, Murray und Sterndale die Körperlänge dieser letzteren c. 661—812 mm. (= 26—32 inches) und die Schwanzlänge c. 126—165 mm. (= 5—6½ inches) beträgt. Unsere vergleichende Untersuchung führt uns auf diese Weise zum Resultate, dass der Balg des Honigdaches aus dem Transcaspi-Gebiet unzweifelhaft zu *Mellivora indica* gehört.

Mellivora indica ist bekanntlich ein charakteristischer Repräsentant der indischen Fauna und erstreckt sich ihre Verbreitung über ganz Indien, vom Fusse des Himalaya bis zum äussersten Süden; nur auf der Malabar-Küste, in Unter-Bengalen und auf Ceylon kommt dieser Honigdachs nicht vor. Oestlich reicht der Verbreitungsbezirk der *Mellivora indica* bis zur Bay von Bengalen, während ihr Vorkommen westlich bis nach Sind nachgewiesen war.

Das nun constatirte Vorkommen der *Mellivora indica* in

Notes from the Leyden Museum, Vol. XV.

unserem Transcaspi-Gebiete muss demnach unser Interesse im hohen Grade erregen, schon allein aus dem Grunde, weil das Verbreitungsgebiet dieser Art durch den erwähnten Fund um ein sehr Bedeutendes nach Westen hin erweitert wird. Andererseits macht dieses Vorkommen der *Mellivora indica* in Transcaspien es sehr wahrscheinlich, dass auch die nicht näher bestimmte *Ratelus* (= *Mellivora*)-Art, welche nach Schumarda (Die geogr. Verbreitung der Thiere, Abth. II, p. 408) in Mesopotamien vorkommt, gleichfalls zu *Mellivora indica* gehört¹⁾.

Die Gattung *Mellivora* nimmt bekanntlich zwei, weit auseinander gelegene und scheinbar vollständig getrennte Verbreitungsgebiete — Indien einerseits und Mittel- und Süd-Afrika andererseits — ein. Diese beiden Verbreitungsbezirke werden jetzt durch den Fund der *Mellivora indica* in Transcaspien und durch das nun sehr wahrscheinlich gemachte Vorkommen dieser Art in Mesopotamien einander viel näher gerückt und ist es daher anzunehmen, dass noch weitere Forschungen diese beiden Verbreitungscentren vollständig überbrücken und zu einem einzigen, zusammenhängenden Verbreitungsgebiet der Gattung *Mellivora* gestalten werden.

St. Petersburg, September 1892.

1) Blanford (Eastern Persia, II, p. 46) glaubte diese Angabe von Schumarda auf den von ihm aufgestellten *Meles canescens* beziehen zu müssen.

NOTE VI.

TWO SUPPOSED NEW SPECIES OF PENTADACTYLUS

DESCRIBED BY

M. M. SCHEPMAN.1. *Pentadactylus (Morula) Smithi*, n. sp.

Shell ovate, blackish brown, variegated with dirty white; whorls about 5, upper ones slightly eroded, slightly convex, plicately ribbed and spirally lirate, plicae of the upper whorls not much pronounced, on the last whorl very prominent; lirae 3 in number on each of the upper whorls, forming elongated tubercles on the ribs, one of the lirae nearest the suture separated from the lower ones, which are 6 in number, by a slight depression. Moreover a few intermediate lirae and waved lines of growth, forming small scales, are present on fresh specimens. The spaces between the ribs are dirty white, especially on the lirae; number of ribs on the last whorl 7 or 8. Aperture ovate, bluish white within, with 5 brown lines or lirae, ending in toothlike granules; outer lip thickened, with brown triangular spots, corresponding with the granules; columellar lip with a callus above, forming a small canal with the outer lip, a second one about the middle and a tubercle close to this last. Canal rather narrow, oblique; lower part of columella brown.

Length 27, diam. 17, length of aperture 15 mill.

Locality: Tjilatjap, Java. Collected by Mr. Overdijk (Leyden Museum).

This shell, which I could not identify, I sent to Prof. von Martens of Berlin, who thought it had some affinity to *Purpura alveolata* Reeve. As this opinion was given with much reserve, I begged Mr. Edgar Smith, of London, to

Notes from the Leyden Museum, Vol. XV.

compare it with the types in the British Museum. Mr. Smith writes, that it is perfectly distinct from *P. alveolata*, that it is allied to *Sistrum* (= *Morula*) *affine* Pease, but that it is more elongate, with more and narrower transverse ridges and more elongate tubercles, and that *affine* has only 4 granules on the lip.

2. *Pentadactylus* (*Morula*) *Martensi*, n. sp.
= *Ricinula siderea* Martens (non Reeve).

Shell elongately or conical ovate, white, with 4 distinct and a few accessory rows of brown spots; whorls 6 or 7, slightly depressed at the upper part, with radiating ribs, crossed by numerous scaly ridges, ribs forming prominent tubercles, below the middle part of the upper whorls; last whorl with a prominent upper row of tubercles, corresponding to those of the upper whorls, and a few other rows of smaller ones, extending more or less on the intermediate spaces; suture waved; number of ribs on the last whorl about 8. Aperture small, ovate, yellowish within, outer lip thickened, with 7 elongate tubercles near the margin; columella excavated, nearly smooth, with only very faint tubercles; canal narrow, oblique.

Length 17, diam. $9\frac{1}{2}$ to 11, length of apert. $9\frac{1}{2}$ mill.

Locality: Red sea. Collected by Mr. Forskål (Leyd. Mus.).

This shell, according to Prof. von Martens, belongs to *Ricinula siderea*, as described in »Vorderasiatische Conchylien" pag. 95, and figured Pl. 5, fig. 49. Though I cannot see every character named there, a. o. not the upper row of spots near the suture, the specimens agree in most respects, especially the narrow ones. Prof. v. Martens, however, says that he is now doubtful, if his identification with *R. siderea* is right, and that if not, the species should receive a new name; thus I sent a specimen to Mr. Smith, who declared it to be different from the specimens of *siderea* in the British Museum.

Rhoon near Rotterdam, September 1892.

Notes from the Leyden Museum, Vol. XV.

NOTE VII.

DEUX ESPÈCES NOUVELLES DE DYTISCIDES
DU MUSÉE DE LEYDE

DÉCRITES PAR

M. RÉGIMBART.*Bidessus divisus*, n. sp.

Long. 2 mill. — Oblongo-ovalis, elongatus, subparallelus; capite et pronoto rufis, hoc ad basin late transversim nigricante, sat tenuiter in disco et fortius apud basin punctato; elytris nigris, margine laterali ad apicem dilatato, macula elongata minuta post medium ad latera, fasciæque post basali in tribus maculis divisa quarum interna minuta et subrotunda, intermedia valde elongata, externa majore cum margine omnino confluenta, flavis, ornatis, sat dense punctatis, pubescentibus, persubtilissime vix visibiliter reticulatis; subtus corpore nigricante, antennis pedibusque rufis. Plica thoracica obliqua, in elytris brevissime continuata.

Cette espèce extrêmement voisine de *B. striola* Sharp s'en distingue par la couleur noire des élytres avec les dessins jaunes bien accusés et bien limités, ainsi disposés: une bordure latérale assez large et dilatée au sommet, une tache allongée et petite en arrière du milieu, très près de cette bordure qu'elle ne touche pas, et une bande post basale divisée plus ou moins complètement en trois taches dont l'interne, petite et presque arrondie, est quelquefois nulle, l'intermédiaire beaucoup plus grande et très allongée, l'externe également très grande et très allongée, entièrement confluenta avec la bordure. De même que chez *B.*

Notes from the Leyden Museum, Vol. XV.

7**

striola la strie prothoracique est oblique et ne se prolonge sur les élytres que par un petit trait très court.

Hab. Borneo: Sambas (Th. F. Lucassen). — Quatre exemplaires.

Laccophilus Lucasseni, n. sp.

Long. vix 4 mill. — *Ovalis*, sat *latus*, *postice attenuatus*, *convexus*; *capite et pronoto rufis*, *hoc ad basin et antice transversim late nigro*; *elytris nigris*, *plus minus praecipue ad latera rufo suffusis*, *marginè laterali*, *vitta transversa basali lata integra*, *postice irregulariter denticulata*, *altera vitta ante apicali plus minus nigro irrorata et disintegrata*, *apice lineaque suturali angusta*, *flavis*; *subtus piceus*, *plus minus ferrugatus*, *pedibus antennisque rufis*. *Reticulatione duplici*, *areolis minutis vix distinctis*.

Forme ovale, assez large, surtout en avant, atténuée en arrière, convexe, le dessus du corps couvert d'une réticulation double dont les petites aréoles très superficielles sont difficilement perceptibles, tandis que les grandes polyédriques ont leurs contours bien imprimés; la tête et le pronotum sont roux testacé, ce dernier avec une marque transversale noire assez large en avant et le long de la base; élytres noires, plus ou moins irrorées de jaune, surtout sur les côtés, avec la bordure et une large bande basale irrégulièrement dentée en arrière, étroitement séparée de la suture, mais largement réunie à la bordure, jaunes; on remarque ensuite entre le milieu et le sommet une bande transversale irrégulière, assez large, beaucoup moins nette, semée et obscurcie de points noirs plus ou moins nombreux qui la rendent nébuleuse; enfin le sommet lui-même est plus ou moins distinctement jaune.

Hab. Java: Simpar, Tegal; 3000 pieds (Th. F. Lucassen). — Quatre exemplaires.

Evreux, Novembre 1892.

NOTE VIII.

ON MERULA JAVANICA AND ITS NEAREST ALLIES

BY

J. BÜTTIKOFER.

When occasionally looking over the Malayan specimens of the genus *Merula* in the Leyden Museum, my attention was drawn by a probably new bird from Celebes, which shows a very strong relationship to *M. javanica* (Horsf.) and *M. schlegeli* (Sclat.). Mr. Seebohm, in his Catalogue of the Turdidae in the British Museum, united *M. schlegeli* with *M. javanica*, though the distinguishing characters, pointed to by Dr. Sclater, are striking enough to have it recognized as an undoubtedly valid species. As Dr. Sharpe described another species from Borneo, we will have to deal, at present, with the following four species of this group:

1. *Merula javanica*.

- Turdus javanicus* Horsf. Trans. Linn. Soc. XIII, p. 148 (1822);
Sclat. Ibis 1861, p. 280; id. 1875, p. 344, pl. 8; Seebohm, Cat.
Birds Br. Mus. V, p. 279 (partim).
Turdus fumidus S. Müll. Verh. Land- en Volkenk. p. 201 (1839).
Turdus hypopyrrhus Hartl. Verz. Brem. Samml. p. 43 (1844).

This species is represented in the Leyden Museum by 1° an adult female from Java (Mount Gedeh, 8000'), the type of Müller's *Turdus fumidus*; 2° an unsexed adult specimen, obtained in 1860 in Java, and 3° an immature specimen from Java.

Notes from the Leyden Museum, Vol. XV.

Both our adult birds have the upper surface, as well as the entire head, neck, throat, chest, upper breast, under wing-coverts and thighs dark olive-brown, somewhat paler brown on fore-neck and chest, and darker brown on head, quills and tail-feathers; lower breast, abdomen and flanks pale chestnut, centre of abdomen and vent white, under tail-coverts olive-brown, all the feathers more or less broadly streaked with white along the centres, sides of rump with hidden white subterminal markings on some of the feathers. Bill, feet and claws yellow.

The immature specimen differs from the adult in having whitish shaft-streaks on some feathers of the upper surface and still more on throat and chest, and in the lower breast, abdomen and flanks being uniform with throat and chest instead of pale chestnut brown. These parts are, however, intermixed with some chestnut feathers, showing the color of the adult stage. The vent and under tail-coverts do not differ in color from these parts in the adult birds.

Blyth, in J. A. S. Beng. XVI, p. 143, and after him Salvadori, Ucc. di Borneo, p. 257, and Seeböhm in his above cited Catalogue of Turdidae, mention *Turdus concolor* Temm., but Temminck has never published nor is to be found in our Museum any manuscript-name like this in connection with *Turdus javanicus*.

As the habitats of this species are mentioned the Islands of Java, Sumatra and Borneo. I doubt, however, whether any specimen ever has been found in Sumatra, which island is mentioned by Bonaparte in his *Conspectus Avium* and after him by Gray and later authorities, without mentioning a specimen seen by themselves. The same I might say of Borneo, if there was not enumerated a specimen from that island by Seeböhm in his above mentioned Catalogue, but having no special trustworthy statement of its origin, it is not out of doubt whether it is really obtained in Borneo.

2. *Merula seebohmi*.

Merula seebohmi Sharpe, Ibis 1888, p. 386; id. 1889, p. 267.

Similar to *M. javanica*, but general color black instead of olive-brown.

Discovered on the Kina Balu, Borneo, at a height of 8—9000 feet.

3. *Merula celebensis*, n. sp.

Very closely allied to *M. javanica*, but more olive-green instead of brown on back, rump, upper tail-coverts, upper wing-coverts and scapulars, the chestnut color on the under surface richer and reaching higher, covering the whole breast, and the white subterminal spots on the sides of the rump much larger and more numerous. The color of the head seems to me to indicate a stage of nonage, being pale earthy brown and showing narrow pale shaft-streaks and fulvous subterminal spots. A single specimen collected by Teysmann at Macassar in 1877.

4. *Merula schlegeli*.

Turdus fumidus (partim) S. Müller, Verh. Land- en Volkenk. p. 261.

Turdus schlegeli Sclat. Ibis 1861, p. 280; Wall. P. Z. S. 1863, p. 485; Sclat. Ibis 1875, p. 347.

Merula javanica (partim) Seebohm, Cat. Birds Br. Mus. V. p. 279.

This species is easily distinguished from *M. javanica* by the paler color, especially of head, neck, throat and chest, by the vent and centre of abdomen being chestnut instead of white, and by the want of white shaft-streaks on the under tail-coverts.

Adult male (type of the species): Mantle, back, rump and upper tail-coverts pale olive-brown, wing-coverts and outer edge of the secondaries like the back, quills and tail-feathers sepia-brown, entire head, hind neck, sides of neck, chin, throat, chest, upper breast and under

Notes from the Leyden Museum, Vol. XV.

wing-coverts and thighs, pale dirty grayish brown, somewhat darker on crown and hind neck; lower breast, abdomen, vent and flanks intensely chestnut-brown, under tail-coverts olive-brown like the upper, margined with the color of the abdomen, without white shaft-streaks. Bill, feet and claws yellow.

The typical specimen, which I believe to be fully adult, is the only representative of this species in our Museum; it has been obtained by S. Müller in the Penpaan valley in the mountainous interior of Timor.

Leyden Museum, 1 November 1892.

NOTE IX.

A NEW HELOTA FROM WEST-JAVA

DESCRIBED BY

C. RITSEMA Cz.

Helota Pasteuri, n. sp. ♀.

Allied to *Helota Feae* Rits. from Burma and *Vandepolli* Rits. from Borneo, but differing from both in the pale colour of the antennae, in the more prolonged apices of the elytra and in the larger size of the yellow elytral spots. From *Feae* it is moreover at once distinguished by the want of the reddish testaceous lateral streaks on the pronotum and by the regularly rounded apical ventral segment. From *Vandepolli* it differs by the flavous lateral streaks of the prosternum and by the flavous basal half of the claw-joint of the tarsi

Length 14,5 mm. -- Shining; rather narrow, elongate, narrowed in front and behind; dark bronze above, here and there with a strong violet gloss; the antennae and the extreme anterior angles of the pronotum testaceous; the four convex yellow elytral spots ovate, rather large and situated between the 3rd and 6th striae. Underneath yellow testaceous, with the exception of the head, the extreme margins of the prosternum, a spot between the the anterior and intermediate coxae, and the elytral epipleurae, which parts are dark pitchy or bronze coloured. The legs are yellow testaceous, with the trochanters, the knees, the apex of the tibiae and the tarsi (with the exception of the basal half of the claw-joint) black.

Head strongly produced in front of the eyes, slightly raised along the middle, deeply punctured, the punctures

Notes from the Leyden Museum, Vol. XV.

on the raised middle portion large and wide apart, smaller and very closely set near the eyes.

Prothorax widest at the base, slightly narrowing towards the front, the sides nearly straight, finely crenulate, the front angles rounded and produced; the base deeply bisinuate, the lateral angles acute, the central lobe rounded and with an impression; the pronotum very coarsely and confluent punctured, with the usual nearly impunctate raised patches. The scutellum is small, roundish, and strongly impressed along the middle. The sterna are nearly impunctate, a few shallow punctures, however, occur on the sides.

Elytra narrowing in slightly curved lines, more strongly so in a sinuate manner near the apices which are prolonged, very slightly dehiscent at the suture and subacute. Each elytron with ten regular rows of punctures of which the 4th and 5th are interrupted by the yellow spots; the punctures of the 5th and following striae are larger than those of the 1st to 4th, and those of the 4th row which are situated between the yellow spots are wider apart than the others; the shoulders are impunctate; the interstices between the 1st and 5th striae are rather flat, those between the 5th and 10th narrow and alternately costiform; the interstice between the 2nd and 3rd striae becomes costiform towards the end and extends down to the extreme tip of the apices. The epipleurae have at the base a few indistinct punctures, especially along the raised inner margin.

Abdomen smooth, with a few hair-bearing punctures; the last ventral segment rounded posteriorly, and with a shallow apical impression.

The legs are smooth and impunctate, the anterior tibiae slightly curved.

Hab. West-Java: Toegoe. — A single female specimen, presented to the Leyden Museum by Mr. J. D. Pasteur to whom the species is dedicated.

Leyden Museum, November 1892.

NOTE X.

A COMPLEMENTARY NOTE
TO MY REVIEW OF THE GENUS RHIPIDURA

BY

J. BÜTTIKOFER.

When, in my 'Review of the genus *Rhipidura*', I was to decide what to make of the two specimens from Mount Arfak, described antea, p. 82, species 43, I believed them, on the authority of Dr. A. B. Meyer, to be specifically distinct from his *R. cinnamomea*.

Our Arfak birds, as well as the specimens mentioned by Dr. Meyer as *R. brachyrhyncha*, thus belonging neither to this latter species nor to the closely allied *R. cinnamomea* Meyer, nor being, in my mind, the females of *R. atra* Salvad., they were enregistered as a new species, which I named *R. meyeri* in honor of Dr. Meyer, who was the first to give a description of the bird and who only with some hesitation identified it with *R. brachyrhyncha* Schlegel.

Afterwards, when making up the key to the species, I was quite unable to thoroughly distinguish *R. meyeri* mihi from the eastern form *R. cinnamomea*, so well agree original description and measurements of this latter species with the two Arfak specimens in our Museum.

Dr. Meyer admits that his *R. cinnamomea* is closely allied with the Arfak bird, but 'weit lebhafter zimmetfarben und kleiner.' The expression 'lebhafter zimmetfarben' is not strengthened by the figure of the bird on plate III, the color in this figure being darker, especially on the upper surface which differs so much from the lower, that

Notes from the Leyden Museum, Vol. XV.

it does not agree with the term *cinnamomea*, *subtus vir pallidior*. As to the difference in size, the following comparative table of measurements will show that they are alike in size of wings and tail (the total length I consider of not the least positive value) and that only Dr. Meyer's Arfak specimen has a somewhat longer tail.

	wing	tail	bill ¹⁾	tarsus
Dr. Meyer, Arfak	7,4;	9 ;	1,2;	2 cm.
Bruyn, "	7,1;	8 ;	1,2;	2 "
Woelders, "	7,2;	8,1;	1,2;	2 "
Dr. Meyer, East New Guinea	7,3;	8 ;	1,2;	1,9 "

On ground of the impossibility to draw a sharp line of demarkation between the western and the eastern form, I was sufficiently convinced of their identity and substituted my manuscript name *R. meyeri* by *R. cinnamomea*, but forgot to alter the first in the description of *R. brachyrhyncha*, where it occurs twice (pp. 81 and 82).

Shortly after the publication of my review, Dr. Meyer wrote me that his Arfak bird and that from the Owen Stanley Range, *R. cinnamomea*, were really two different species, and very much obliged me in sending, on my request, both birds for comparison. The results of this comparison are the following:

R. brachyrhyncha Meyer (nec Schl.) is identical with our two Arfak birds. The difference in length and color of the tail ²⁾ in the three specimens now before me are individual, if not due to age or season. They are specifically distinct from the eastern form, *R. cinnamomea* Meyer, and has, therefore, my original name *R. meyeri* to be restored and put in place of *R. cinnamomea* on page 82 of my review.

The eastern form is distinguished from the western by

1) In the key to the species of my Review, the length of the bill in the two great subdivisions A (p. 67) and B (p. 70) are by mistake noted in cm. I hardly need to say that instead of cm. ought to stand mm.

2) On p. 83, line 8 from the bottom, read inner instead of outer web.

its richer red color, which is much inclining to chestnut, especially on the upper surface, and by having the crown of the head red like the back, without any tinge of olive-brown. The tail being incomplete, I can only state the three outermost pairs to be uniform red, and that one black feather of the centre pair is present.

The place of the new species in the key will be between *R. brachyrhyncha* Schl. and *R. cinnamomea* Meyer, and the key on p. 70, third line from top, will have to undergo the following alteration:

- d'*. Two centre pairs of tail-feathers black, next pair black on the inner, red on the outer web, three outermost pairs, as a rule, uniform red.
- a'''*. General color pale cinnamon, crown tinged with olive-brown *R. meyeri*.
- b'''*. General color rich cinnamon-red, crown red like the back *R. cinnamomea*.

Leyden Museum, November 1892.

NOTE XL.
ON EGGS OF SOME BRITISH GUYANA BIRDS ¹⁾

BY

Dr. C. G. YOUNG.

1. *Troglodytes furvus* (Gm.).
Wren.

They build their nests, of straw and feathers, on the beams about houses, and in empty bottles and drain-pipes which are hung up under the verandah-roof for their special use.

They lay four eggs.

The egg — 18 mm. by 12 mm. — is white, thickly marked with red-brown.

They hatch from January to June. — One egg (N^o. 20).

2. *Tanagra episcopus* L.
Blue Sackie.

The nest is open, like a cup, and is composed of grass lined with bamboo-leaves and the thread from the coconut-palm: sometimes small sticks and pieces of cotton are used to make up the outside. They build on low trees or in shrubs.

They lay three eggs.

The egg — 25 mm. by 18 mm. — is a light blue-grey covered over with dark and light brown marks and spots;

1) This Note may be considered a continuation of a previous paper of this kind (N. L. M. 1889, p. 145) wherein Dr. Young described nests and eggs of a series of British Guyana Birds. The eggs mentioned in the present Note under the various numbers, as well as some birds skins belonging to these eggs, are all presented by that Author to the Leyden Museum. J. BÜTTIKORF.

some eggs have in addition black spots here and there.

They hatch from February to July. — Two eggs (N^o. 25).

3. *Tanagra palmarum* Max.
Cocoa-nut Sackie.

The nest is like a cup and is built of small sticks and roots on the cocoa-nut- and other palms, and sometimes on shrubs.

They lay three eggs.

The egg — 27 mm. by 19 mm. — is pink white, spotted with dark red-brown and grey: there is a band of spots round the egg near its large diameter.

They hatch in February, March and April. — One egg (N^o. 26).

4. *Ostinops decumanus* (Pall.).
Bunyah.

They make a pendant nest about four, sometimes five, feet long, shaped like a club with a long handle, in colonies, from the extremities of the branches of palms or of tall forest-trees, of the stems of vines, coarse and fine grass, and of the fibres from the cocoa-nut-palm, and they line the bottom of the nest with leaves. The place of entrance is a small oval hole in the narrow part of the nest near its attachment to the branch. As the young get strong they make a second place of entrance near the bottom of the nest. The nest is completed in about fourteen days. They generally build on the lee side of the tree, and over water, not because they get any protection from the water, but because in the thick forest that is the only side of the tree they are able to build on. The young when hatched are naked and very helpless.

They lay two eggs.

The eggs vary much in length, being from 40 mm. to 35 mm. by 25 mm.; they are rosy white, thickly marked with violet-red.

Notes from the Leyden Museum, Vol. XV.

They hatch in January, February and March. — Two eggs (N^o. 27).

5. *Molothrus atronitens* Cab.

Lazy Bird.

They lay one egg in the nest of other birds; especially in the nest of the wren (*Troglodytes furvus*): frequently the egg is found in the nest of the yellow-headed rice bird (*Xanthosomus icterocephalus*) which builds in the open fields.

The egg — 20 mm. by 17 mm. — is pink white, thickly marked with grey; many of the marks have a pink tinge. — One egg (N^o. 21).

6. *Xanthosomus icterocephalus* (L.).

Yellow-headed Rice Bird.

They make an open nest, in colonies, on the rushes in the swamps, or on the stems of growing rice, of pieces of the leaves of the sugar-cane or of rice-straw; the nest is held up by being built round the stems of three or four of these water-plants, near their top.

They lay three eggs.

The egg — 22 mm. by 16 mm. — is a light greenish blue, marked with black and light grey spots and lines: many of the spots end in lines.

They hatch from February to June. — One egg (N^o. 28).

7. *Leistes guianensis* (L.).

Red-breast.

They build an open nest of grass, on the ground, on open fields.

They lay three eggs.

The egg — 21 mm. by 16 mm. — is white, thickly covered with light violet-red marks.

They hatch from January to June. — One egg (N^o. 30).

8. *Quiscalus lugubris* Sw.

Boat-tailed Grackle.

The nest is open and very deep, and is built of rushes

Notes from the Leyden Museum, Vol. XV.

on the low shrubs found on the open savannahs. They build in colonies.

They lay three eggs.

The egg — 26 mm. by 19 mm. — is grey-green, marked with black and purple irregular lines and dots.

They hatch in March, April and May. — One egg (N°. 29).

These birds when flying a short distance, open their tails vertically and use it like the rudder of a boat, but if they fly far they open this rudder-like tail from above, so that it forms two plains meeting below at a small angle.

9. *Todirostrum cinereum* (L.).

Pipitoorie.

They make an oval, hanging nest of grass, hair, and the cotton from the seeds of plants on the end of the branches of tall trees, or on the trailing branches of vines. The place of entrance is an oval hole in the side of the nest and it is protected by an overhanging roof.

They lay two eggs.

The egg — 17 mm. by 10 mm. — is a long oval, and it is pure white.

They hatch from March to July. — One egg (N°. 23).

10. *Myiozetetes cayennensis* (L.).

Small Kiskadie.

They make a domed nest of grass on the outer branches of low, or of moderately high trees, resembling the nest of *Pitangus sulphuratus* (L.), only smaller; the place of entrance is in the side of the nest. Outside the nest is very rough and ragged, but inside it is quite the contrary.

They lay three eggs.

The egg — 25 mm. by 16 mm. — long and sharp pointed, is pink white, with red-brown spots and blotches, especially on the large end and round the large diameter.

They hatch from January to June. — One egg (N°. 22).

Notes from the Leyden Museum, Vol. XV.

11. *Tyrannus melancholicus* Vieill.

They make a nest, like a cup, of small sticks lined with grass and the leaves of the bamboo, on the outer branches of moderately high trees.

They lay three eggs.

The egg — 26 mm. by 20 mm. — is greenish white, with red-brown and light brown markings over its entire surface. The eggs in the same nest vary much as regards size, brightness of colour, and number of marks.

They hatch from January to June. — One egg (N°. 24).

12. *Symallaxis cinnamomea* (Gm.).

Rootie.

The nest is built of small sticks in the centre of low bushes, and it is many times the size of the bird. The shape of the nest is a long oval, and it rests horizontally in the tree, one of the ends being in the middle of the bush, while the other end reaches to almost its outer margin. The place of entrance is in the top of the outermost end of this oval mass, and its direction is at first downwards and then straight inwards to the other end where the nest proper is. This passage is formed by an archway of small sticks placed on end and meeting above. Where the eggs rest there is usually a lump of clay hollowed out and lined with grass.

They lay four eggs.

The egg — 19 mm. by 15 mm. — is white, with a slight blue tinge and has no marks.

They hatch in May and June. — Three eggs (N°. 33).

13. *Dendroornis pardalota* (Vieill.).

Carpenter Bird.

They lay their eggs in holes, made by the bird itself, in the rotten wood of trees, especially in the Oronoque-tree, Sandcocoer-tree, *Erythrina glauca*, the rotten wood

Notes from the Leyden Museum, Vol. XV.

being very soft. Sometimes they build in other places. The egg sent was taken, along with two others, out of an old cassava press, a hollow tube of basket work, which had been thrown into a tree.

They lay three eggs.

The egg — 26 mm. by 20 mm. — is white.

They hatch in May and June. — One egg (N°. 34).

The egg of this bird resembles the egg of the woodpecker, not only by being white but also by having the same hard-looking white gloss.

14. *Rosthramus sociabilis* (Vieill.).

Cricketa Hawk.

They build a flat nest of sticks, in colonies, on moderately high trees in the interior about the head-waters of the creeks.

They lay three eggs.

The egg — 42 mm. by 33 mm. — is greenish white, blotched and spotted with dark brown, or light brown marks, no two eggs being marked alike, some have very few marks while others are so covered that the ground colour of the egg is hidden.

They hatch in April and May. — Two eggs (N°. 39).

After the breeding season these hawks separate and scatter all over the colony where there is fresh, still water, where they catch the fresh water-snail, called cricketa, on which they live. They lift this snail out from among the water-plants by their feet, as other hawks lift birds, but when they get clear of the water-plants, they, while on the wing, take the shell from their feet and carry it in their bill to one particular dry branch where they eat the snail: below this branch one can find a pile of empty shells.

15. *Cathartes aura* (L.).

Red-headed Carrion Crow.

The nests of these birds are very hard to find although

Notes from the Leyden Museum, Vol. XV.

the bird itself is plentiful. They make a flat nest of sticks on the ground, or inside hollow trees, especially the hollow stem of the cabbage-palm: one nest was found inside the withered body of a dead cow.

They lay two eggs.

The egg — 77 mm. by 50 mm. — is greenish white, marked with dark brown or light brown, large and small spots: the large spots form a ring round the egg near its large end.

They hatch in January, February and March. — One egg (N^o. 41).

This vulture is called red-headed to distinguish it from the black-headed variety, but its head is not always red, as frequently they are seen with the head a dirty grey, especially on a wet day.

16. *Cathartes atratus* (Bartram).

Black-headed Carrion Crow.

They build a flat nest of sticks on the ground at the foot of some tree, or inside hollow trees, either forest-trees or palms, or among the dry leaves of the sugar-cane where these are left between the rows of growing canes.

They lay two eggs.

The egg — 65 mm. by 45 mm. — is brownish white, marked with dark, dirty brown spots. There is one large splash of the same colour on one side of the egg near its large end.

They hatch in January, February and March. — One egg (N^o. 40).

17. *Ardea agami* Gm.

King of the Herons.

Their nests are flat and composed of sticks. They build, in colonies along with the other small herons, on low trees. Some years ago they were in the habit of building in the young Courida-trees, *Avicennia nitida*, along the

Notes from the Leyden Museum, Vol. XV.

sea-shore, and at the mouth of the Berbice River, now they are never seen there, having migrated to more lonely places in the marshes of the interior, where they collect in large numbers in the breeding season. I have known a tub full of their eggs to be collected at one time.

They lay two eggs.

The egg — 52 mm. by 38 mm. — is greenish blue.

They hatch in April, May and June. — One egg (N°. 36).

18. *Dendrocygna discolor* Scl. & Salv.
Wiscissi Duck.

They build a flat nest of sticks and grass, among the reeds and rushes, near the river-sides or in the swamps, in quiet places. Sometimes they build in low trees and in the hollow stump of dead palms, *Mauritia flexuosa*.

They lay four eggs.

The egg — 52 mm. by 35 mm. — is white.

They hatch in August. — One egg (N°. 37).

19. *Columba rufina* Temm.
Pigeon.

They build, in colonies, flat nests of sticks on moderately high trees in lonely places, either on the margin of the creeks, or in the trees which grow at the back of the savannahs. Isolated nests have been found on trees close to houses.

They lay two eggs.

The egg — 35 mm. by 28 mm. — is white.

They hatch in March and in August. — One egg (N°. 32).

20. *Chamaepelia griseola* (Spix).
Ground Dove.

They make a flat nest of sticks and grass on the ground or in low bushes. When they build on the ground the nest is composed principally of grass and it is deeper than the nest they make in bushes.

Notes from the Leyden Museum, Vol. XV.

They lay two eggs.

The egg — 25 mm. by 17 mm. — is white.

They hatch in January, February and March, but their nests have been found in August. — One egg (N^o. 31).

21. *Craz alector* L.

Powis.

They build an open nest of grass, on the ground, under the shelter of low bushes, in the interior.

They lay two eggs.

The egg — 83 mm. by 60 mm. — is white; it is covered with a rough coating of small elevations.

They hatch in March and April. — One egg (N^o. 38).

22. *Porphyrio martinicus* (L.).

Blue Coot.

The nest is flat and is built of small sticks and of grass among the tall water-plants which grow in the swamps: rarely they build on low bushes. The egg sent was taken, with four others, out of a nest built in a coffee-tree.

They lay six eggs.

The egg — 50 mm. by 32 mm. — is pink white, covered, especially about the large end, with light grey and light brown spots.

They hatch in May, June and July. — One egg (N^o. 35).

New Amsterdam, Berbice, British Guyana.

March 31st, 1892.

NOTE XII.

CINQ ESPÈCES NOUVELLES D'ÉLATÉRIDES
DE L'ÎLE DE JAVA

DÉCRITES PAR

E. CANDÈZE.*Agraeus Lucasseni*, n. sp. ♂.

Rhomboïdalis, *brunneo-niger*, *opacus*; *prothorace trapezoideo*, *a basi ad apicem gradatim fortiter angustato*, *medio* (♂) *tumido*, *lateribus planatis*, *fulvo-squamulosis*; *elytris gibbosis*, *dorso bituberculatis*, *versus basin squamulis fulvis sparsis*. — Long. $4\frac{1}{2}$ mill., lat. $2\frac{1}{4}$ mill.

Hab. Java: Simpar (rés. Tegal), 3000 pieds d'altitude (Mr. Th. F. Lucassen). — Musée de Leide.

Petite et remarquable espèce dont je n'ai qu'un mâle sous les yeux, et que je dédie à M. Th. F. Lucassen qui l'a découverte. Elle est caractérisée principalement par sa forme régulièrement rhomboïdale qui est due à la forte atténuation antérieure du prothorax, en sorte que l'avant et l'arrière sont également coniques. Le milieu du prothorax forme un relief longitudinal, les côtés sont plats et garnis de poils squamiformes dorés. Les élytres, plus larges que lui et très courtes, sont très fortement bombées, sans stries sinon à la base où elles sont du reste peu marquées avec le 3^e intervalle portant un tubercule oblong.

Agraeus maculosus, n. sp. ♀.

Niger, *subnitidus*, *argenteo-maculosus*, *pilis nigris erectis*

* Notes from the Leyden Museum, Vol. XV.

sparsutus; antennis brunneis, acute serratis; prothorace longitudine latiore, lateribus arcuato, dorso convexo, inaequali, canaliculato; elytris prothorace angustioribus, brevibus, a basi angustatis, basi tantum striatis. — Long. 5 mill., lat. 2 mill.

Hab. Java: Kalibakoeng (rés. Tegal), 1000 pieds d'altitude (Mr. Th. F. Lucassen). — Musée de Leide.

Cette espèce est caractérisée par les mouchetures argentées tranchant sur ses téguments très noirs. Je n'en ai vu qu'un specimen que j'estime être une femelle, car il a tout à fait la forme du même sexe du *catulus*, espèce également de Java, dont je possède un mâle et cinq femelles, et qui est encore inédite.

Melanoxanthus tricolor, n. sp.

Niger, parum nitidus, pubescens; antennis nigris; prothorace latitudine haud longiore, convexo, tenuissime punctato, rufo, guttis duabus conjunctis margine antico nigris, elytris a basi sensim attenuatis, punctato-striatis, sutura apice praesertim depressa, plaga laterali abbreviata testacea; subtus, thorace excepto, niger. — Long. 7 mill., lat. 1½ mill.

Hab. Java: Simpar (rés. Tegal), 3000 pieds d'altitude (Mr. Th. F. Lucassen). — Musée de Leide.

Abstraction faite de la tache jaune qui pare les élytres dans leur portion latero-antérieure, cette espèce ressemble beaucoup au *M. nigrosignatus* Cand. (Notes Leyd. Mus. XII, 1890, p. 246), et n'en est peut-être qu'une variété.

Il est bon de noter toutefois que le corselet est un peu plus court et la suture des élytres plus enfoncée.

Melanoxanthus cinnamomeus, n. sp.

Minutus, cinnamomeus, opacus, pubescens; fronte aequaliter convexa, creberrime punctulata; prothorace latitudine haud longiore, creberrime punctis umbilicatis notato, angulis posticis pallidioribus; elytris punctato-striatis, flavescentibus; subtus pedibusque concoloribus. — Long. 3½ mill., lat. ¼ mill.

Notes from the Leyden Museum, Vol. XV. •

Hab. Java: Telaga-bodas (rés. Préanger), cratère près Garoet (Prof. A. A. W. Hubrecht). — Musée de Leide.

L'uniformité de couleur dans un genre où les espèces sont généralement bicolores ou tachetées, rendra celle-ci facilement reconnaissable. J'en dirai autant de la ponctuation du prothorax qui n'est visible qu'avec le secours d'une forte loupe, les points, bien qu'ombiliqués, étant fort peu imprimés.

Je possède aussi cette espèce du Mont Tjikoraï, également dans le Préanger.

Agonischius submetallicus, n. sp.

Angustus, æneus, metallescens, pube fuscescente obductus; antennis obscuris; prothorace latitudine longiore, a basi usque ad apicem gradatim angustato, convexo, crebre punctato, medio canaliculato; elytris prothorace paulo latioribus, ultra medium sensim ampliatis punctato-striatis; abdomine et metathorace passim plus minusve rufescentibus. — Long. 10 mill., lat. 2 mill.

Hab. Java: Simpar (rés. Tegal), 3000 pieds d'altitude (Mr. Th. F. Lucassen). — Musée de Leide.

Fort voisin d'une espèce du Darjeeling, l'*A. metallicus*¹⁾, dont il a la tournure et la couleur, avec la même tendance du dessous du corps à passer au rougeâtre. Il est toutefois plus petit et proportionnellement plus étroit.

Lorsqu'on regarde sous un jour oblique la pubescence des élytres, on voit que celle des intervalles pairs a un reflet un peu différent de celui des autres, ce qui tient à une inclinaison un peu moindre des poils; cette disposition de la pubescence leur communique un aspect légèrement rayé.

Je possède également cette espèce du Mont Tengger, à l'orient de Java.

Glain-lez-Liége, 4 Novembre 1892.

1) Elatérides nouveaux, fasc. V, dont la publication sera prochaine.

NOTE XIII.

EXPLANATION OF PLATE 2

BY

C. RITSEMA Cz.

- Fig. 1. *Prosopocoelus Pasteuri* Rits. ♂, from West-Java: Mt. Poentjak (Notes Leyden Museum, Vol. XIV (1892), p. 31).
- Fig. 2. *Prosopocoelus tarsalis* Rits. ♂, from Central-Java: Magelang (Notes Leyden Museum, Vol. XIV (1892), p. 191).
- Fig. 3. *Cyclommatus canaliculatus* Rits. ♂, from the island of Nias (Notes Leyden Museum, Vol. XIII (1891), p. 235).
- Fig. 4. *Eurytrachelus Hansteini* Albers, ♂, from West-Sumatra: Solok (Deutsche Entom. Zeitschr. Vol. XXXIII (1889), p. 235).
- Fig. 5. *Gnaphaloryx tricuspidis* Rits. ♂, from West-Sumatra: Solok (Notes Leyden Museum, Vol. IV (1882), p. 163; — Midden-Sumatra, Supplement, 1892, p. 4).
- Fig. 6. *Aegus Leeuweni* Rits. ♂, from West-Sumatra: Solok (Notes Leyden Museum, Vol. IV (1882), p. 164; — id. Vol. XI (1889), p. 235, note; — Midden-Sumatra, Supplement, 1892, p. 4).

Leyden Museum, November 1892.

NOTE XIV.

DESCRIPTION D'UNE NOUVELLE ESPÈCE
DU GENRE STENOPHIDA, PASC.

PAR

W. ROELOFS.

Stenophida rufipes, n. sp.

Long 7 mill., rostr. excl. — De la taille et de la forme étroite, allongée, de *S. linearis* Pasc.; noir, pattes brun-rouges, antennes de la même couleur, mais un peu plus noirâtres.

Tête et rostre ponctués, le dernier plus fortement à la base, graduellement plus finement vers l'extrémité, un point imprimé entre les yeux.

Prothorax couvert d'une ponctuation serrée, avec une ligne latérale d'écailles blanches. Ecusson linéaire.

Elytres un peu plus larges que chez *S. linearis*, garnies de la même sculpture de stries finement ponctuées et des intervalles de points confluent. La base des élytres, les trois intervalles à côté de la suture et une courte ligne sur les côtés à l'extrémité, garnis d'écailles piliformes, blanches.

Dessous et pattes ponctués. Jambes avec des rainures. Les épimères du mésothorax, les épisternums métathoraciques et les côtés du premier segment de l'abdomen garnis d'écailles blanches. Pygidium garni de points fins à sa base, plus gros sur le reste de sa surface, garni d'écailles blanchâtres, plus grosses que celles qui garnissent le reste des téguments; elles sont plus denses sur la ligne médiane.

Notes from the Leyden Museum, Vol. XV.

Les cuisses et les jambes peu densément garnis en dessous de poils pales; les cuisses avec de rares écailles blanches, sur la tranche supérieure.

Dans les deux individus que j'ai sous les yeux, le rostre est plus long (avec la tête environ aussi long que le prothorax) que dans deux individus de *S. linearis*, provenant de Mombas, que j'ai reçus de Mr. Simpson, et qui me paraissent des mâles. Le rostre est au contraire plus court que dans un troisième individu de *S. linearis* (dans la collection Neervoort van de Poll) qui provient de Mr. Raffray, qui l'a capturé dans l'île de Zanzibar ¹⁾. Ce dernier possède un rostre impectué vers l'extrémité. Je n'ose pas décider, d'après l'examen de cet individu unique, si ces caractères suffissent pour constituer une espèce différente.

Les deux individus de *S. rufipes* se trouvent dans la collection Neervoort van de Poll et proviennent du pays de Matabele.

La Haye, Janvier 1893.

1) Je l'avais indiqué, par erreur, dans les Notes from the Leyden Museum (vol. XIV, p. 135) comme de Mombaia.

NOTE XV.

FIVE NEW SPECIES OF THE GENUS HELOTA
FROM SIKKIM AND DARJEELING

DESCRIBED BY

C. RITSEMA Cz.

Helota Desgodinsi, n. sp. ♂.

This handsome species is closely allied to *Helota curvipes* Oberth. ¹⁾ from the Himalaya, but at once distinguished by its more robust shape, by the coppery colour of the upper surface, by the broad fulvous streaks on the sides of the pronotum, and by the broadly subtruncate apices of the elytra in the male sex.

Length 10 mm. — Shining; above coppery with shades of green; the scutellum brassy, the extreme lateral margins of the elytra bronze green; the antennae pale testaceous, the terminal joint of the club infusate; the sides of the pronotum broadly margined with fulvous, which colour is not sharply separated from the dark metallic colour of the disk; the elytra provided with two pairs of yellow convex spots, the anterior pair placed between the 4th and 6th ²⁾, the posterior pair between the 3rd and 6th striae; these spots are surrounded with the green shade, especially the posterior pair. The colour of the underside is testaceous, with the exception of the head and the ely-

1) Coleopterorum Novitates, I (1883), p. 60.

2) The punctures bordering the anterior spots are somewhat pushed aside, which makes the spots broader than the distance between the 4th and 6th striae.

tral epipleurae which are brassy; the legs are testaceous, with the apex of the femora and the entire tibiae brassy, the tarsi more or less dark brown-red.

The head strongly but not densely punctured on the raised middle portion of the face, finer and closer near the eyes, still finer and extremely close together on the narrowed front portion.

Prothorax transverse, slightly narrowing in faintly curved lines towards the front margin, the lateral margins indistinctly crenulate, the anterior angles prominent and rounded; the base bisinuate, the lateral angles acute, the median lobe subtruncate and with a small impression at the extreme apex. The pronotum strongly and rather densely punctured, very densely on the fulvous lateral streaks; an impunctate streak, narrowing towards the front margin, runs along the middle, and is, on both sides of its base, accompanied by a distinct impression. The scutellum is strongly transverse and impunctate.

The elytra are nearly parallel, the sides regularly curved, the apices broadly subtruncate, the outer angle of the truncation broadly rounded, the sutural one sub-angular. Each elytron with ten regular striae of punctures which become larger towards the sides; the interstices are very finely punctured, but on the 6th and following interstices moreover a few large punctures occur; on the apical portion of the elytra the interstices are costate.

The brassy coloured under surface of the head is remotely covered with large punctures; on the prosternum the punctures are shallow, on the sides of the metasternum they are finer; the central portion of the latter is very finely pubescent; the elytral epipleurae are distinctly but sparsely punctured; the abdomen apparently impunctate, but in the broad impression which occurs on the apical segment distinct hair-bearing punctures are present; the apical ventral segment is broadly truncate with slightly prominent lateral angles, the hinder margin fringed with long pale coloured hairs; the apical margin of the last

Notes from the Leyden Museum, Vol. XV.

dorsal segment is trisinate, the central sinus very small.

The femora are very finely and sparingly punctured, on their metallic tip, however, the punctures are better visible; the tibiae are very strongly punctured, those of the anterior pair of legs are strongly curved in the middle, those of the posterior pair slightly sinuate.

Hab. Environs of Pedong in Sikkim (Desgodins). — A single male specimen of this species, which is dedicated to its captor, is in the collection of Mr. René Oberthür.

Helota pustulata, n. sp. ♀.

Like the foregoing species allied to *Helota curvipes* Oberth.¹⁾ from the Himalaya, but somewhat smaller and decidedly narrower; moreover the colour of the upper surface is a more coppery bronze, the prothorax is proportionately smaller, and the anterior and posterior elytral spots are placed closer together.

Length $8\frac{1}{2}$ mm. — Shining; above coppery bronze, the coppery hue more distinct on the head and pronotum than on the elytra, the scutellum bright metallic green; the antennae testaceous, the terminal joint of the club infusate; the anterior angles of the pronotum pale fulvous; the elytra provided with two pairs of yellow spots, the anterior pair placed between the 4th and 6th, the posterior pair between the 3rd and 6th striae. The colour of the under surface is reddish testaceous, with the exception of the head (without the throat) and the elytral epipleurae, which are brassy; the legs are reddish testaceous with the apex of the femora and the entire tibiae metallic green, the tarsi dark pitchy with a bronze hue on the claw-joint.

The head is strongly and rather remotely punctured on the raised middle portion of the face, near the eyes the punctures are smaller and somewhat closer together, and

1) *Coleopterorum Novitates*, I (1883), p. 60.

on the narrowed front portion the punctures are very small and densely set.

The prothorax is transverse, slightly narrowing in nearly straight lines towards the front margin, the lateral margins very indistinctly crenulate, the anterior angles slightly prominent, the front margin curved backwards; the base bisinuate, the lateral angles acute, the median lobe subtruncate; the upper surface regularly closely covered with strong punctures which are slightly more approximate to each other towards the sides; an impunctate streak, extending on to the front margin, is present in front of the scutellum, and is accompanied, on both sides of its base, by a distinct impression. The scutellum is strongly transverse, broadly rounded behind, and impunctate.

The elytra are subparallel, slightly narrowing in faintly curved lines towards the end; in front of the apices the sides are very slightly concave and, as the elytra are dehiscent at the suture, the apices are narrowly pointed; each elytron has ten regular striae of punctures which become larger towards the sides; the interstices are very finely punctured, and become costate on the apical portion.

The under surface of the head shows very distinct punctures which is likewise the case with the sides of the prosternum; on the middle of the prosternum and the sides of the metasternum the punctures are very fine; the middle of the metasternum and the abdomen, as well as the elytral epipleurae, are apparently impunctate; the apical ventral segment is subtruncate, and provided with a broad flattened space in front of the apical margin; the metallic apex of the femora is finely and sparsely punctured; the tibiae are strongly punctured, the anterior pair slightly curved.

Hab. Environs of Pedong in Sikkim (Desgodins). — A single female specimen in the collection of Mr. René Oberthür.

Helota guttata, n. sp. ♀.

Very closely allied to *Helota serratipennis* Rits. from
Notes from the Leyden Museum, Vol. XV.

Burma ¹⁾ but of a different coloration, the upper surface being coppery with shades of green, in stead of being dark bronze; moreover, the shape of the new species is somewhat narrower and, consequently, slightly more elongate, the elytra are less convex in a transverse direction just before the anterior yellow spots, and their tips more narrowly rounded than in the female sex of *serratipennis*.

Length 8 mm. — Shining; above coppery with shades of green, especially on the head and thorax; the scutellum shining golden green; the antennae fulvous, the club infusate, the scape with a metallic green spot anteriorly; the front angles of the pronotum testaceous; the elytra provided with two pairs of yellow convex spots of which the anterior pair are placed between the 4th and 7th, the posterior pair between the 3rd and 6th striae; the spots are surrounded with bluish black. The colour of the underside is pale testaceous, with the exception of the head and elytral epipleurae which are brassy; the legs are reddish testaceous, with the apex of the femora, the entire tibiae and the tarsi bronze green.

The head strongly but not densely punctured on the middle of the face, finer and closer near the eyes, very fine on the narrowed front portion.

Prothorax transverse, slightly narrowing in nearly straight lines to the front margin, the lateral margins indistinctly crenulate, the anterior angles scarcely prominent, the front margin slightly curved backwards; the base bisinuate, the lateral angles acute, the median lobe broadly rounded, the pronotum strongly and regularly densely punctured, the punctures becoming slightly larger and consequently more closely set towards the sides; an impunctate streak, narrowing towards the front margin, runs along the middle and is, on both sides of its base, accompanied by a distinct impression. The scutellum is strongly transverse, broadly rounded behind.

1) Ann. Mus. Civ. Genova, vol. XXX (1891), p. 820.

The elytra are distinctly narrowed in regularly curved lines towards the apices which are more narrowly rounded than in the female sex of *serratipennis*; the posterior third of the outer margin is remotely serrulate. Each elytron has ten regular striae of punctures which become larger towards the sides; the interstices show some extremely fine punctures and become costate on the apical portion.

The brassy coloured underside of the head is remotely covered with deep punctures; on the sides of the prosternum the punctures are shallower, and on the sides of the metasternum they are finer; the elytral epipleurae have a few large punctures on their basal half; the middle of the abdomen is apparently impunctate, on the sides and on the apical segment, however, fine but distinct punctures are visible; the apical ventral segment is subtruncate at the tip where it is moreover faintly impressed; the tibiae are strongly punctured, the metallic tip of the femora sparsely so; the anterior tibiae are slightly curved.

Hab. Environs of Pedong in Sikkim (Desgodins). — A single female specimen in the collection of Mr. René Oberthür.

Helota tibialis, n. sp. ♂.

Closely allied to and strongly resembling *Helota laevigata* Oberth. ¹⁾, and from the same locality (Darjeeling). Both species are easily recognized by the colour of the legs, these being fulvous without metallic green. From the male sex of *laevigata* the new species may be separated at a glance by the compressed dilatation of the inner margin of the anterior tibiae close to the apex.

Length 8½ mm. — Shining; above dark bronze green with coppery tinges; the antennae fulvous with the two apical joints of the club infusate; the sides of the pronotum narrowly margined with pale fulvous, more broadly,

1) Coleopterorum Novitates, I (1883), p. 59.

however, towards the front margin. Each elytron provided with two yellow spots of which the anterior, slightly transverse one is situated between the 3rd and 7th, the posterior one between the 3rd and 6th striae. The entire under surface, the elytral epipleurae included, is pale fulvous, with the exception, however, of the head (without the throat) which is brassy. The legs are pale fulvous, inclining to pale chestnut on the knees and tibiae; the tarsi are pitchy, with the exception of the basal half of the claw-joint which is light brown; an infusate spot is present on the upper side of the femora just beyond the middle of their length, and a black line runs along the inner margin of the apical half of the tibiae.

The head is very closely punctured, more remotely, however, on the middle of the face.

The prothorax is distinctly broader at the base than long, narrowing to the front margin in sinuate lines; the lateral margins are faintly crenulate, the anterior angles sub-angular, not prominent, the front margin straight; the base bisinuate, the lateral angles acute and slightly divergent, the median lobe broadly rounded; the upper surface strongly but not closely and somewhat irregularly punctured, with a smooth line along the middle; moreover three pairs of indistinct impressions are to be observed, viz. one near the front margin, another in the basal angles, the third (which are elongated and strongly divergent) originating from the base on both sides of the median lobe; the scutellum strongly transverse, broadly rounded behind, and impunctate.

The elytra conspicuously narrowing in straight lines towards the apices which are separately rounded: very broadly at the outer angle, narrowly at the sutural one; each elytron with ten regular striae of distinct punctures which become stronger towards the outer margin, the interstices apparently impunctate, flat, slightly costate at the end.

The brassy coloured underside of the head is covered

Notes from the Leyden Museum, Vol. XV.

with deep punctures; the sides of the pro- and metasternum rather strongly, the middle portion very finely punctured; the elytral epipleurae, abdomen and femora impunctate, the tibiae with a few indistinct punctures. The apical ventral segment emarginate at the end, the emargination occupying the entire width and densely fringed with pale yellow glithering hairs; in front of the apical margin a semilunar patch of a fulvous tomentose pubescence is present; the apical dorsal segment is rather dark brown and, at the apex, sub-angularly notched in the middle with broadly rounded lateral angles.

The legs are very elongate; the anterior tibiae are strongly curved in the middle, and the inner margin of the apical half widens out towards the apex, so as to form a flattened dilatation which abruptly ends before it reaches the tip of the tibia; the margin of this dilatation is black, densely fringed with short pale coloured hairs and ends anteriorly in a small but distinct tooth; the basal joints of the anterior tarsi are slightly enlarged and fringed with long hairs; the intermediate tibiae are faintly curved, the posterior ones sinuate.

A few colourless soft hairs are spread over the under surface of the beetle; on the middle of the metasternum, however, these hairs are much more numerous and shorter.

Hab. Darjeeling (Christie). — A single male specimen presented to the Leyden Museum by E. Wasmann S. J.

Helota Severini, n. sp. ♀.

This species is very closely allied to and strongly resembles *Helota notata* Rits. from Burma ¹⁾. The head in the new species, however, is smaller, the sides of the prothorax are less convergent, the pronotum is more regularly closely punctured, and the punctures in the elytral striae are stronger.

1) Ann. Mus. Civ. Genova, vol. XXX (1891), p. 900.

Length 6—6½ mm. — Very narrow and elongate, shining; above bronze green with coppery tinges, the tip of the mandibles and the antennae pale testaceous, the club of the latter infusate. Each elytron provided with two yellow spots, which are narrowly surrounded with bluish black and are situated between the 3rd and 7th striae; the anterior spot is conspicuously larger than the posterior one. The colour of the under side is pale testaceous, with the exception of the head (without the middle of the throat), the lateral portions of the prosternum and the elytral epipleurae, which are brassy; the legs are testaceous, with the apex of the femora and the base of the tibiae metallic green, the tarsi more or less dark brown.

The head is remotely punctured, especially on the middle of the face where the punctures are large; they are finer and closer set along the inner orbits, and very minute on the narrowed front portion.

The prothorax is somewhat broader at the base than long, slightly narrowing to the front margin in nearly straight lines, the anterior angles rounded, not at all prominent, the front margin straight; the base bisinuate, the lateral angles acute, the median lobe rounded; the upper surface regularly densely covered with deeply impressed punctures which leave, however, a smooth space in front of the scutellum free; the scutellum transverse and impunctate.

The elytra subparallel, narrow and elongate, the apices broadly, almost conjointly rounded; each elytron with ten regular striae of punctures which are stronger than in *notata*; the interstices slightly costate at the end.

The underside of the head and the brassy lateral portions of the prosternum strongly punctured, the sides of the metasternum with a few minute punctures, the elytral epipleurae, legs and abdomen apparently impunctate; the anterior tibiae nearly straight, the intermediate and posterior tarsi slender and elongate.

Hab. Environs of Kurseong in Sikkim (Braet). — Three female specimens from the Brussels Museum, one of which

Notes from the Leyden Museum, Vol. XV.

is now in the Leyden Museum. — The species is dedicated to the zealous Assistant of the Brussels Museum, Mr. G. Severin.

The following species of *Helota* are as yet known to inhabit Sikkim (environs of Pedong and Kurseong) and the adjacent district Darjeeling:

longipes Rits., from near Pedong (Desgodins); — likewise known from Darjeeling (coll. Neervoort van de Poll).

Fairmairei Rits., from near Kurseong (Braet); — likewise known from Darjeeling (coll. Oberthür and Copenhagen Museum).

Oberthüri Rits., from near Pedong (Desgodins); — likewise known from Darjeeling (coll. Oberthür).

Desgodinsi Rits., from near Pedong (Desgodins).

pustulata Rits., from near Pedong (Desgodins).

guttata Rits., from near Pedong (Desgodins).

laevigata Oberth., from near Kurseong (Braet) and Pedong (Desgodins); — likewise known from Darjeeling (coll. Oberthür).

tibialis Rits., from Darjeeling (Christie).

Severini Rits., from near Kurseong (Braet).

Boysi Rits. (the presumed ♀ of this species), from near Kurseong (Braet) and Pedong (Desgodins); — likewise known from Darjeeling (Christie).

pusilla Oberth., from near Kurseong (Braet); — likewise known from Darjeeling (coll. Oberthür).

fulvitarsis Rits., from near Pedong (Desgodins); — likewise known from Darjeeling (coll. Oberthür).

Leyden Museum, December 1892.

NOTE XVI.

DESCRIPTION OF A NEW SPECIES
OF THE CETONID GENUS THAUMASTOPEUS, KRAATZ

BY

C. RITSEMA Cz.

Thaumastopeus Westwoodi, n. sp. ♀.

Length (from the anterior margin of the prothorax down to the end of the suture) 33 mm.; breadth at the shoulders 18 mm. — Subshining above, more strongly shining beneath. Entirely black, without distinct metallic hue, the club of the antennae pitchy, the prominent tufts of hairs on the parts of the mouth ferruginous.

The head glossy and impunctate on the vertex; between the eyes and along the middle of the face rather small punctures are present, whereas large punctures occur on the sides of the face below the eyes; on the impressed portion of the lobes of the clypeus no distinct punctures are visible, but on the margins a very fine punctuation is to be observed.

The prothorax convex in a transverse as well as in a longitudinal direction; the upper surface very finely coriaceous, the punctures stronger and denser set towards the sides, especially in the anterior angles; the sides bisinuate, faintly margined along the basal half; the basal lobe subemarginate, leaving the elongate triangular tip of the scutellum uncovered; a small and shallow transverse impression is (perhaps accidentally) present close to the basal margin, midway between the median lobe and the lateral angles, which latter are narrowly rounded and but very

Notes from the Leyden Museum, Vol. XV.

slightly divergent; the front margin is straight, the anterior angles (when seen in front) sharply protruding.

The elytra at the base broader than the base of the thorax, the sides nearly parallel, only slightly attenuating towards the end, the apices obliquely notched at the suture, the outer angle of the notch sub-angular, the sutural one not protruding; the upper surface of the elytra is finely coriaceous, not so finely however as the thorax, and covered with large shallow punctures which are more or less arranged in rows; on the sides of the apical half and on the apical portion (including the apical callus) transverse striae are present; the lateral margin of the anterior half of the elytra is accompanied by a very fine line; the sutural margin is in the declivous apical portion strongly raised.

The pygidium broad and short, not projecting beyond the apex of the elytra, and covered with fine transverse striae, which on the obtuse transverse keel surround two centres.

The sides of the prosternum are longitudinally strigose, those of the mesosternum transversely; the sides of the metasternum are sparsely covered with elongate shallow punctures, whereas the sides of the abdomen show irregularly placed short curved striae; the median streak of the metasternum and abdomen bears a few very fine punctures.

The mesosternal process is strongly protruding and obliquely directed forwards and downwards; it is compressed (higher than broad), truncate at the apex where it is highest, the upper and under margins divaricating in curved lines; the lower angle of the truncation is broadly rounded, the upper angle sub-acute; the upper side of the process is finely strigose, whereas a deep furrow is present along the sides which, as well as the under side, are impunctate; the under side, however, shows a fine line along the middle which is continued to the hind margin of the metasternum.

Notes from the Leyden Museum, Vol. XV.

Of the anterior and intermediate legs the coxae are transversely strigose, the femora obliquely so, the latter moreover provided with a few large punctures; of the posterior pair of legs the coxae are sparingly covered with shallow punctures and a few striae, the femora with oblique striae and a few punctures; the anterior tibiae have a few longitudinal striae and large punctures, their outer margin is armed with two distinct teeth before the apical one; the intermediate and posterior tibiae are likewise strigose and punctate, provided with an obsolete narrow groove along the inside, and notched on the outside about one-third from their apex (very indistinctly however on the intermediate pair); the apical margin of the posterior tibiae is tricuspidate on the outside, that of the intermediate ones bicuspidate.

Hab. West Sumatra: Klein Mandeling, Tapanoeli Residency (A. L. van Hasselt). — A single female specimen in the Leyden Museum.

I dedicate this very conspicuous species, which will prove to be allied to *Lomaptera striata* Wall., to the late Prof. Westwood, who died at Oxford the 2nd of this month at the age of eighty seven.

Leyden Museum, January 1893.

NOTE XVII.

DESCRIPTION DE QUATRE ESPÈCES
NOUVELLES DU GENRE RHYPARUS, WESTW.

(SCARABAEIDAE: COPRINI)

PAR

L. FAIRMAIRE.1. *Rhyparus denticollis*, n. sp.

Long. 6 mill. — Elongatus, parallelus, fuscus, opacus, antennis palpisque ferrugineis; *R. sumatrensi* Fairm.¹⁾ affinis, similiter coloratus, sed multo minor et angustior, capite minus brevi, minus transverso, antice quadriangulato, haud truncato, fronte medio breviter biplicato, prothorace subquadrato, elytris paulo angustiore, lateribus antice valde angulatim exsertis, medio obtuse angulatis, basi paulo angustato, dorso sexcarinato, carinis lateralibus interruptis, carinis nitidis; elytris oblongis, subparallelis, sutura elevata et utrinque costis 3 ante apicem incrassatis et abbreviatis, elytrorum apice fortiter declivi et utrinque tuberculo grosso signato, costa 3^a basi intus paulo obliquata, interstitiis latis, planis, biserialim leviter transverso-impressiusculis; pectore rugoso, prosterno antice et postice acute producto, abdomine lateribus transversim impresso, femoribus intermediis intus obtuse biangulatis.

Hab. Java. orient.: Mont Ardjoeno (W. E. J. Hekmeyer).
— Musée de Leide.

1) Notes from the Leyden Museum, XV, p. 17.

La tête est bien moins courte et moins large que chez le *sumatrensis* où elle paraît presque tronquée; les côtes latérales du corselet sont interrompues par une impression assez profonde, les 2 médianes sont parallèles; les angles antérieurs sont aussi saillants, mais tronqués obliquement.

2. *Rhyparus approximans*, n. sp.

Long. $5\frac{1}{2}$, à 6 mill. — Præcedenti simillimus, prothorace latiore, elytris haud angustiore, angulis anticis valde obtusis, carinis 2 discoidalibus minus parallelis, antice leviter approximatis, elytris magis parallelis, costis apice minus incrassatis, sutura apice magis producta, tuberculis apicalibus magis truncatis, interstitiis subtilius serie-punctatis, femoribus intermediis simplicibus sat distinctus.

Hab. Bornéo occ.: Sambas (Dr. J. Bosscha). — Musée de Leide.

3. *Rhyparus obsoletus*, n. sp.

Long. 5 mill. — Præcedenti simillimus, et tantum carinis prothoracis discoidalibus, angulis anticis obtusissimis, posticis valde obtusis, subrotundatis, elytrorum intervallis grossius punctatis, femoribus intermediis subtus obsolete unidentatis distinguendus.

Hab. Sumatra occ.: Tambang Salida (J. L. Weyers). — Musée de Leide.

4. *Rhyparus helophoroides*, n. sp.

Long. $3\frac{1}{2}$, à 4 mill. — Præcedentibus valde affinis, sed magis ater, minor, prothorace basi elytris vix angustiore, lateribus antice valde sinuato, angulis anticis plus minusve obtuse productis, lateribus medio sat fortiter angulatis, carinis discoidalibus antice paulo approximatis, interstitiis grossius granulosus, elytris paulo brevioribus, carinis apice paulo minus incrassatis, interstitiis profundius seriato-punctatis, fere transversim plicatulis, seriebus interdum lineola subelevata longitudinaliter separatis.

Notes from the Leyden Museum, Vol. XV.

Hab. Bornéo occ.: Sambas (Dr. J. Bosscha); Java: Simpar et Kemanglen, rés. Tegal (Mr. Th. F. Lucassen). — Musée de Leide.

Les angles antérieurs du corselet sont assez variables, plus ou moins saillants, mais toujours obtus ou arrondis; la forte ponctuation des élytres et la petite taille rendent cette espèce facile à reconnaître. Elle ressemble extrêmement au *R. Desjardinsii* de l'île Bourbon et n'en diffère guère que par la taille plus faible, la forme plus étroite, le corselet plus court et les élytres à la côte entière, le 2^e intervalle à 2 séries de gros points au lieu de 3.

La découverte de ces nouvelles espèces du genre *Rhyparus* est fort intéressante, et vient à l'appui des rapprochements signalés entre la faune de Madagascar, de l'île de France et de Bourbon avec les faunes indiennes et malaises. Le genre *Callirhipis* que j'ai signalé aux Seychelles, est un exemple également frappant de ces rapprochements. Mais ne serait-il pas possible que le genre *Rhyparus* ait été importé à Bourbon avec la terre des plants qu'on y a transportés au commencement de la colonisation?

Paris, Janvier 1893.

NOTE XVIII.

ON A COLLECTION OF SHELLS FROM THE MOLUCCAS

BY

M. M. SCHEPMAN.

(Plate 3).

The shells mentioned in this paper, were, for the greater part, collected by Prof. K. Martin on his journey in the East Indian Archipelago, which was undertaken with geological purposes. Another series was brought together by G. W. W. C. Baron van Hoëvell, Resident of Amboyna. This second series contained only a few species, which were, however, represented by a large number of individuals. All these specimens are presented to the Leyden Museum by Messrs. van Hoëvell and Martin. I have included two species from Celebes, though this isle does not belong geographically to the Moluccas. The most interesting part of the collection, consists in the large number of smaller species from a cleft in coral-limestone on Saparoea. From this isle only a few species were known, by the recent publication of Prof. Boettger on the Mollusks collected by Mr. A. Strubell (Bericht Senckenb. naturf. Gesellsch. 1891, pp. 241—318). The list is now considerably enlarged by the discoveries of Prof. Martin.

Only one species, a *Macrochlamys*, is new to science, and of the variety of another, *Helix unguiculastra* var. *pilosa* Mart., the exact locality was still unknown. Moreover I have described a new variety of *Helix zonaria* Linn. As, however, many species are remarkable on account of their variability or their localities, I thought it might be desirable to give the complete list.

Notes from the Leyden Museum, Vol. XV.

1. *Nanina (Xesta) citrina* Linn.

Martens, Ostas. Landschn. p. 193, pl. 6, figs. 1, 2; pl. 7.

From Leitimor, the southern peninsula of Amboyna, a large number of specimens has been procured by Baron van Hoëvell, all belonging to the typical form, with rounded aperture; many specimens are citron yellow, with one more or less dark brown band at the periphery, bordered by a broad whitish zone and a second narrow one at the sutures; a few specimens are orange yellow with a brown band, others are pale yellow without brown band, a single one is purple-brown with only the white zones; a rather large number belongs to

mutatio dimidiata Fav.,

which has the upper part of the shell brown, the under part whitish or yellowish; to this variety likewise belong: a specimen from North Ceram, 2 young specimens from Wabaai, Ceram, and 3 very young ones from Porto, Saparoea; those from Ceram are collected by Martin. A few young specimens from this last locality may be classified as belonging to the type; this is also the case with 2 specimens from Hatoesoea, Ceram, collected by Martin, and with a few from the district Wahaai, near the Toloearang; 3 young or bad specimens may belong to var. *columellaris* Beck. Still should be mentioned a variety of a more or less dark purple brown colour, with whitish zones near the sutures and periphery, some of the specimens with one brown band like the type, which variety resembles the next species in colour, but, according to the rounded aperture and more conical shape, belongs to *N. citrina*; it is figured by Reeve (Conch. Ic. Mon. *Helix*, fig. 482^d). Martin collected 2 specimens at Porto, Saparoea, and another individual, without brown band, on the same isle, but without noticing the exact locality, while Baron van Hoëvell procured specimens from the kampong Saparoea.

Notes from the Leyden Museum, Vol. XV.

2. *Nanina (Xesta) Strubelli* Boettger.

Boettger, Bericht Senckenb. naturf. Gesellsch. 1891, p. 253, pl. 3, figs. 2, 2^a.

Of this species, which Prof. Boettger has distinguished from the preceding by its depressed shape and square-elliptical aperture, one specimen has been collected by Baron van Hoëvell at Porto, Saparoea, which, after Boettger, belongs to the type, but is very large, having a diam. major of 43 mill. Of two specimens collected by Martin, the one from Hitoë, Amboyna, is quite typical in its measurements, while the other, from Poeloe Poea (near Boeanó), is only a trifle smaller than the first, but more depressed.

3. *Macrochlamys Martini*, n. sp.

(Plate 3, fig. 1).

Testa perforata, subdepressa, sericeo-nitens, lineis spiralibus confertis sculpta, pallide cornea, infra pallidior, ad suturam zona opaca, luteo-albida picta; spira convexa, sutura superficialis; anfractibus 4, convexiusculi, ultimus depresso-rotundatus, antice haud descendens; apertura paulum obliqua, late lunata; peristoma rectum, acutum; margo columellaris ad insertionem breviter reflexus.

Diam. maj. $8\frac{1}{2}$, min. $7\frac{1}{3}$, alt. 5; apert. lat. $4\frac{1}{2}$, alt. 4 mill.

This new species is mainly distinguished from the smaller species of *Macrochlamys* from the East-Indian Archipelago, by the impressed spiral lines. *M. consul* Pfr. and *fulvocarnea* Martens are much larger and quite different in colour. From *M. (Hyalina) amboinensis* Martens, which is the only allied species of the Moluccas recorded by v. Martens, it may be distinguished by its shape, paler colour, smaller perforation, and shallow suture, but above all by the distinct spiral lines.

The specimens were collected with the next species by Prof. Martin, and I have much pleasure in dedicating this species to its discoverer.

Notes from the Leyden Museum, Vol. XV.

4. *Trochomorpha planorbis* Lesson,
var. *Lessoni* Martens.

Martens, Ostas. Landschn. p. 249, pl. 13, fig. 4.

From Saparoea, Goenoeng Rila; found by Martin in a cleft in coral-limestone; 3 specimens.

The spiral striae of the underside are only visible with the aid of a very strong lens.

5. *Kaliella milium* Martens.

Helix miliacea Martens, Ostas. Landschn. p. 268, pl. 12, fig. 15.

Of this species, which Prof. v. Martens named *H. milium* in Monatsber. Berl. Acad. 1864, one fine specimen has been found by Martin, together with the preceding species.

6. *Helix (Chloritis) unguulina* Linn.

Martens, Ostas. Landschn. p. 279.

One typical specimen, collected by Martin in the district Wahaai, near the Toloearang, Ceram; from this isle it has also been recorded by v. Martens and Wallace. Its largest diameter is 41 mill.

7. *Helix (Chloritis) unguiculastra* Martens,
var. *pilosa* Martens.

Martens, l. c. p. 282.

Of this rare shell, one rather fine specimen has been collected by Martin at Saparoea. By this discovery the exact locality, which remained still doubtful, is now established.

8. *Helix (Planispira) zonaria* Linn.

Martens, Ostas. Landschn. p. 307, pl. 16, figs. 6—11; pl. 19, fig. 6.

A large number of specimens has been collected by Baron van Hoëvell and a few others by Martin; many of them, especially those from Leitimor, Amboyna, belong to:

Notes from the Leyden Museum, Vol. XV.

var. lineolata Martens.

The specimens from the last-named locality agree for the greater part with pl. 16, fig. 6 of v. Martens; other ones are smaller and less marked with the greyish spots, they have the bands 3 and 4, if one of them is lost it is the 3rd; other specimens are quite destitute of bands. One very remarkable specimen is distinctly keeled by a prominent rounded keel near the base and it has a second one near the umbilicus. I am, however, convinced that it is only a monstrosity, perhaps caused by some wound of the soft parts, while in the act of building the shell.

The specimens from Porto, Saparoea, belong to this variety by their colours, though in shape they come near to *var. nitidiuscula* Boettg. Those from the neighbourhood of the kampong Saparoea have the shape of *var. nitidiuscula*, but they are slightly flattened; many of them have the same pattern as *var. lineolata*, but the lustre of *var. nitidiuscula*, some are banded and others without bands, even nearly white; they pass imperceptibly into

var. nitidiuscula Boettger.

Boettger, Bericht Senckenb. nat. Gesellsch. 1891, p. 265.

From the kampong Saparoea. A few specimens, one brown or yellowish white, with one or two bands, and one specimen without bands.

Another specimen from Aboro, Haroekoe, is yellowish white, with the bands 3 and 4.

A large number from Porto, Saparoea, also collected by Baron van Hoëvell, shows a great diversity of colours and markings; the chief variations are:

- a. more or less dark brown, with the bands 3 and 4 or one of them.
- b. under part of shell nearly white, the upper part with obsolete flames; bands 3 and 4 or one of them.
- c. like the preceding, but the space between the suture and 3rd band chestnut-brown.

Notes from the Leyden Museum, Vol. XV.

- d. nearly white, with band 4 and sometimes with traces of other bands.
- e. like the preceding, but only with band 3.
- f. like the preceding, with bands 3 and 4.
- g. brown or yellowish white, or yellow without bands or with very faint ones.
- h. subvar. *albina*; white with a yellowish tint.

All these variations are connected by intermediate links.

Martin has collected at Wahaai, Ceram, a very fine variety, which does not agree with any other, and which I must consider as new. I name it after its discoverer

var. *Martini*.

(Plate 3, fig. 2).

Shell small, much depressed, with a more transverse-oblong aperture, peristome widely expanded, last whorl commonly but slightly deflected. The shell is transparent, horny, with one dark brown peripheral band (n°. 3) often occupying only the second part of the last whorl; above and below the surface is adorned with alternating transparent and opaque white bands; space near the umbilicus uninterruptedly pellucid (one specimen has a broad brown band along the suture and two narrow ones between this and the peripheral one).

diam. maj. 21, min. $15\frac{1}{2}$, alt. $7\frac{1}{2}$, apert. lat. incl. perist.

[$11\frac{1}{2}$, alt. 9 mill.

» » 24, » 19, » 10, apert. lat. incl. perist.

[$13\frac{1}{2}$, alt. $10\frac{1}{2}$ mill.

Prof. v. Martens calls the colour of his var. *fasciata*, the only one collected by him at Wahaai, pure white, while this new variety is remarkable by its transparency in fresh specimens. Moreover only one specimen agrees with the measurements. It may have many affinities with var. B. of *Tapparone Canefri* (Ann. del Mus. Civ. di Storia nat. di Genova, 1883, p. 152), but the umbilicus is not larger than in other varieties.

Notes from the Leyden Museum, Vol. XV.

At last should be mentioned another variety from the same locality, which, according to Prof. v. Martens, belongs to his var. *fulminata*, but is smaller; the aperture in the specimens collected by Martin is more rounded than that of any of the preceding varieties, the peristome is brownish; its measurements are:

diam. maj. 21—22, min. 17—18, alt. 9—9½; apert. lat.
[10½—11, alt. 10 mill.

9. *Pythia scarabaeus* Linn.

Pfeiffer, Mon. Auric. p. 82.

A few specimens from Aboro, Haroekoe, collected by Baron van Hoëvell, varying in colour and shape, as recorded by nearly every author on this genus. One specimen is yellowish white, with only very few brown spots. Martin collected one specimen on Saparoea and another at Hatoesoea, Ceram; this last specimen has the umbilicus nearly closed.

10. *Pythia semisulcata* A. Adams.

Adams, Proc. Zool. Soc. London, 1850, p. 151.

From this species a few specimens were collected by Baron van Hoëvell along with the preceding *Pythia*; as I could not determine it, I asked the assistance of Prof. Boettger of Franckfort, who identified it as *semisulcata* Ad. The specimens agree with the description of Adams, but the measurements differ considerably from those given by Dr. Pfeiffer (Mon. Auric. p. 93), the largest specimen having a total length of 32 mill., the diam. maj. is 20, diam. min. 15½, mill. (in Pfeiffer's Monograph 27: 14:11). One specimen is nearly white, the other ones vary in colour and in the umbilicus which is more or less large.

Two young specimens from Saparoea, collected by Martin, seem to belong to the same species.

Notes from the Leyden Museum, Vol. XV.

11. *Pythia striata* Reeve.

Pfeiffer, l. c. p. 94. — Boettger, Bericht Senckenb. naturf. Gesellsch. 1891, p. 277.

A large number of specimens is collected by Mr. van Hoëvell at Aboro, Haroekoe. They vary much in colour, in the umbilicus, and also in shape and height of the whorls, consequently of the spire.

12. *Pythia crassidens* Hombr.

Boettger, l. c. p. 275.

It is not without hesitation that I make mention of this species, which has many affinities with *P. striata* and *pantherina* Ad.; the umbilicus is perfectly closed or at least nearly so. In a genus where this character is subject to so much variation, I should suggest, that by more material, these species will prove to pass into each other. It is not difficult to find in a large lot (there are more than 150 specimens of this and the preceding species) specimens which would be considered as the type of a new species, but on comparison every character is variable.

13. *Melania crenulata* Deshayes.

Brot, in Martini-Chemn. 2^d. Ed., Mon. *Melania*, p. 114, pl. 14, figs. 9, 9^a—9^f.

One much eroded specimen seems to belong to var. B of Brot (= *M. Tirouri* Desh.), but is much smaller, being only 42 mill. in length. It has been collected in the Ajer Besar near Waisama, Ceram.

14. *Melania funiculus* Quoy & Gaim.

Brot, l. c. p. 136, pl. 17, figs. 1, 1^a, 1^b.

Two specimens together with the preceding species.

15. *Melania clavus* Lamarck.

(Plate 3, fig. 3).

Brot, l. c. p. 175, pl. 21, figs. 17, 17^a—c.

Notes from the Leyden Museum, Vol. XV.

The only specimen, collected by Martin in the same locality as the preceding species, resembles in shape fig. 17 of Brot, but differs by the ribs, which cover the whole shell, though on the last whorl they become obsolete.

16. *Paludina costata* Quoy & Gaim.

Quoy & Gaim., Voy. de l'Astrolabe, pl. 80, figs. 1—3.

A few specimens, varying much in the number of spiral keels, were collected by Martin in the lake of Tondano, Celebes. The largest specimen has a length of 45 mill.

17. *Stenothyra ventricosa* Quoy & Gaim.

Mousson, Land u. Süßw. Moll. von Java, p. 63, pl. 8, fig. 6.

One specimen without operculum, together with the preceding species.

18. *Leptopoma vitreum* Lesson.

Martens, Ostas. Landschn. p. 143 pro parte.

Large numbers of specimens have been collected by Martin at Wahaai, North Ceram; near Honitetoe, West Ceram; also a small variety at Kajeli, Boeroe; at last a few broken specimens from Saparoea may belong to this species.

Those from Wahaai are generally large, a few specimens have brown zigzag lines, one specimen has moreover two distinct brown bands, which are obsolete in another specimen with broad flames, while a third has only 2 bands; many specimens have slight crenulations on the backside of the peristome, recalling in mind *L. crenilabre* Boettg., which has, however, a much broader peristome, with more and deeper crenulations, and the auricle near the columella is different; a few specimens from Wahaai in another box and probably from a somewhat different locality, are smaller and white, with the exception of one young specimen, which is banded.

The specimens from West Ceram vary in the same manner

Notes from the Leyden Museum, Vol. XV.

as those from Wahaai, a few specimens being brown banded or flamed.

In Boeroe a small variety has been collected with the next species; a comparison of the measurements show the differences; they are in specimens from:

Wahaai: diam. maj. incl. perist. 16, alt. 15 mill.

Kajeli: » » » » 12²/₃, » 12 mill.

A still smaller specimen has only a diam. maj. of 11¹/₂ mill.

The presence of bands in some specimens, which, on account of the deep notch of the columella, belong without doubt to *L. vitreum*, renders this character valueless to distinguish *L. vitreum* from *pellucidum* Grat., as suggested by Dr. von Moellendorff.

19. *Leptopoma intermedium* Martens.

Martens, Ostas. Landschn. p. 144, pl. 4, fig. 4.

Of this species, which has been separated by many authors from the preceding one, a full-grown specimen and a few young ones are brown with the keels whitish.

Locality: Kajeli, Boeroe.

20. *Cyclotus amboinensis* Pfr.

Martens, Ostas. Landschn. p. 121, pl. 2, figs. 4, 5.

A few specimens, most in bad condition, from Saparoea, Goenoeng Rila, in a cleft in coral-limestone, and another from Wahaai, all collected by Martin.

21. *Cyclotus plicosus* Martens.

Martens, Ostas. Landschn. p. 125, pl. 2, figs. 13, 14.

From Saparoea, together with the preceding species.

22. *Cyclotus liratus* Martens.

Martens, Ostas. Landschn. p. 127, pl. 2, fig. 15.

From the same locality as the preceding species: this one and *C. plicosus* are not in a very good condition and the characteristic sculpture is obsolete.

Notes from the Leyden Museum, Vol. XV.

23. *Omphalotropis ceramensis* Pfr.

Martens, Ostas. Landschn. p. 160, pl. 4, fig. 11.

A few specimens, collected by Martin together with the preceding species. They are smaller than those described by v. Martens, varying from 7 to 9 mill. in length. In every other respect they agree with his description and figure.

24. *Helicina oxytropis* Gray.

Martens, Ostas. Landschn. p. 166, pl. 4, fig. 20.

Many specimens along with the preceding species. They are very small, having only a diameter of 7 mill.

25. *Helicina suturalis* Martens.

Martens, Ostas. Landschn. p. 168, pl. 4, fig. 18.

Along with the preceding species.

26. *Helicina Idae* Pfr.

Martens, Ostas. Landschn. p. 170, pl. 4, fig. 19.

A few specimens along with the two preceding species.

The three species of *Helicina* are new for the Mollusk-fauna of Saparoea.

27. *Neritina (Neritaea) pulligera* Linn.

Martens, in Martini-Chemn. 2^d Ed. Mon. *Neritina*, p. 49, pl. 1, figs. 4, 5.

One specimen from the northern coast of Ceram, and another from Hatoesoea, Ceram; both collected by Prof. Martin.

28. *Neritina (Neritaea) iris* Mouss.

Martens, l. c. p. 52, pl. 9, figs. 5, 6.

A few specimens from Hatoesoea, Ceram, collected by Martin; they are nearly all inhabited by hermit-crabs, and in consequence the denticles of the columellar margin are destroyed.

29. *Neritina (Neritodryas) cornea* Linn.

Martens, l. c. p. 140, pl. 12, figs. 14—18.

One specimen, collected along with the preceding species. Prof. v. Martens has not recorded it from Ceram.

30. *Septaria suborbicularis* Sow.

Martens, in Martini-Chemn. 2^d ed. Mon. *Navicella*, p. 31, pl. 6, figs. 5—14.

Many specimens from a brook at the southern coast of Leitimor near Ema, Amboyna, collected by Martin; a few belong to the subvariety *furcato-radiata* Martens.

31. *Cyrena coaxans* (Gmel.) Martens.

The distinction of the species in the genus *Cyrena* is so very difficult, that I was obliged to ask the assistance of Prof. v. Martens, who informed me that the present species is identical with that, which is named *C. cyprinoides* Quoy & Gaimard in the Berlin Museum and also in Malak. Blätter, X, 1863, p. 130, and figured by Reeve, Conch. Iconica, Mon. *Cyrena*, pl. 7, fig. 24, under the name of *cyprinoides*, but that on comparison with the original figure in the »Voyage de l'Astrolabe", it is doubtful whether it be the same species, this figure being more angulate behind; that it is, however, without doubt the species described by Rumphius as *Chama lutaria et coaxans*, called *Venus coaxans* by Gmelin, and that it should therefore be named *Cyrena coaxans*, though Gmelin has confounded it with *C. ceylonica* Chemn. In consequence the synonymy should be:

Cyrena coaxans (Gmel. sp. pars) Martens.

» *cyprinoides* Martens (olim) non Quoy & Gaimard.

» » Reeve, fig. 24.

One specimen has slight divaricating plicae on the epidermis of the posterior part, calling in mind *C. divaricata*. After comparison of the figure of Reeve, they seem

Locality: Pasahari, Ceram, collected by Martin.

Prof. v. Martens says that the specimens, collected along with the preceding species, better agree with *C. papua* than with any other, and may be also the true *C. cyprinoides* Q. & G. The largest specimen is much larger than the figure of Lesson in Guérin's *Magasin de Zoologie*, 1832, Moll. pl. 11; a single valve, however, of a young specimen agrees rather well. It agrees perhaps still better with *C. cyprinoides* of Clessin's *Monograph* in the 2^d ed. of Martini-Chemnütz, p. 124, pl. 20, figs. 3 and 4, in the position of the posterior angle. If the suggestion of Prof. v. Martens, that *cyprinoides* and *papua* are the same species, is right, the latter name has the priority.

Rhoon near Rotterdam, December 1892.

Dr. H. ten Kate informs me as follows about some of the localities mentioned in Note XXVII of the preceding volume:

Lahoeroe » » **Lahoeroes.**

Soesoek and Ainiba are the names of the lakes themselves and not of kampongs as I suggested in writing: „near Soesoek and Ainiba”.

M. M. SCHEPMAN.

NOTE XIX.

SUPPLEMENTARY LIST OF THE DESCRIBED
SPECIES OF THE GENUS HELOTA

BY

C. RITSEMA Cz.

Since the publication of my »Synopsis and List of the described species of the genus *Helota*'' (Notes Leyd. Mus. XIII, 1891, p. 223), in which 37 species are enumerated, the following 8 species have been described:

<i>affinis</i> Rits. Notes Leyd. Mus. XIII, 1891,	Burma.
. p. 253 (near <i>dubia</i> Rits.).	
<i>Desgodinsi</i> Rits. l. c. XV, 1893, p. 131.	Sikkim.
(near <i>curvipes</i> Oberth.).	
<i>guttata</i> Rits. l. c. XV, 1893, p. 134.	»
(near <i>serratipennis</i> Rits.).	
<i>Pasteuri</i> Rits. l. c. XV, 1893, p. 111.	Java.
(near <i>Vandepolli</i> Rits.).	
<i>pustulata</i> Rits. l. c. XV, 1893, p. 133.	Sikkim.
(near <i>curvipes</i> Oberth.).	
<i>Severini</i> Rits. l. c. XV, 1893, p. 138.	»
(near <i>notata</i> Rits.).	
<i>tibialis</i> Rits. l. c. XV, 1893, p. 136.	Darjeeling.
(near <i>laevigata</i> Oberth.).	
<i>ventralis</i> Rits. l. c. XIII, 1891, p. 251.	Burma.
(near <i>Kolbei</i> Rits.).	

Leyden Museum, January 1893.

NOTE XX.

ESPÈCE NOUVELLE DU GENRE NECROPHORUS DE
L'ARCHIPEL INDO-NÉERLANDAIS

DÉCRITE PAR

A. GROUVELLE.*Necrophorus insularis*, n. sp.

Niger; antennarum tribus ultimis articulis, elytrorum epipleuris et duabus fasciis transversis aurantiacis; prima fascia subbasali, humeros attingente et suturam versus interrupta, infra humeros nigro-punctata; secunda fascia subapicali, flexuosa, suturam lateraque haud attingente; prothorace transverso, angulis omnibus rotundatis; elytris glabris, lateribus parce pilosis; pectore et apice abdominis brunneo-pubescentibus; tibiis posticis rectis.

Mas. Clypeo medio membranaceo-depresso, rufo-testaceo.

Long. 19 à 20 mill.

Noir; trois derniers articles des antennes, épipleures des élytres et deux taches transversales sur chacune d'elles rouges orangés. Première tache atteignant à son bord basilaire le niveau du sommet de l'écusson, interrompue avant la suture, s'élargissant vers l'épaule en enclosant un point noir et se réunissant à la bande rouge de l'épipleure. Deuxième tache subapicale, irrégulièrement limitée sur le fond noir, n'atteignant ni la suture, ni le bord marginal. Quelques poils noirs vers les angles postérieurs de la tête. Prothorax transversal; angles antérieurs et postérieurs largement arrondis; bord antérieur droit, base arquée. Elytres très éparsement pubescentes sur les côtés, bords

Notes from the Leyden Museum, Vol. XV.

latéraux frangés de poils gris, plus développés surtout vers le sommet. Poitrine et sommet de l'abdomen garnis de longs poils bruns. Tibias postérieurs droits. Epistome du mâle rouge.

Hab. Sumatra (Musée de Leide). — Les exemplaires proviennent de l'Expédition IJzerman et sont offerts par le Dr. J. F. van Bemmelen.

Paris, Janvier 1893.

NOTE XXI.

NOTICE

SUR LA NOCTUA (APATELA?) RADIANS, WESTW.

PAR

P. C. T. SNELLEN.

Sous le nom susdit, feu le Prof. Westwood a décrit et figuré dans son ouvrage intitulé »Cabinet of Oriental Entomology" (p. 58, pl. 28, fig. 4), un Lépidoptère Hétérocère d'un aspect un peu insolite. A la première vue, on croirait avoir affaire à un Cosside du voisinage du genre *Zeuzera* Latr., auquel la forme allongée de ses ailes antérieures à sommet arrondi fait en effet penser. Je présume que ce facies étrange a empêché Guenée de le comprendre parmi les Noctuérites dans son grand ouvrage sur cette famille. Pourtant, l'espèce se classe indubitablement parmi les Noctuelles, et Mr. Westwood avait bien vu quand il considérait son espèce comme telle, quoique le nom générique d'*Apatela* Stephens, qui correspond au genre *Acronycta* Ochs., Guenée et Lederer, me semble appliqué fort au hasard.

J'avais depuis longtemps dans ma collection deux mâles de la *radians*, un des îles Aroe, provenant du voyage de Mr. C. Ribbe, et un autre des îles Key, dont Mr. Piepers avait fait l'acquisition, mais la femelle m'était encore inconnue. Le Musée de Leyde ayant reçu de Mr. A. L. van Hasselt, Résident de Tapanoeli (Sumatra occidentale), à la bonté duquel il doit déjà tant d'objets d'histoire naturelle précieux, un exemplaire féminin frais et bien conservé, pris à Tano Bato (Tapanoeli) le 11 Novembre 1891, je demandais et j'obtenais sans peine de Mr. Ritsema la

Notes from the Leyden Museum, Vol. XV.

permission d'examiner cet exemplaire et de le comparer à mes deux mâles, afin de préciser, autant que possible, la position de la *radians* dans le système.

Comme je le disais plus haut, il est hors de doute que l'espèce appartient aux Noctuélites. Le papillon n'a qu'une nervure interne simple aux premières ailes et deux aux secondes, qui ont aussi une nervure sous-costale distincte. Cette nervure n'est soudée qu'à la base du bord antérieur de la cellule discoïdale et s'en dégage bientôt pour aboutir au bord antérieur. Les antennes sont sétacées, la nervure 5 des premières ailes prend son origine très-près de la nervure 4, et le frein des secondes ailes est très-distinct. Tous les caractères de la famille des Noctuélites, comme ils sont établis par Lederer, Noctuiden Europa's, sont donc présents. Je puis ajouter que les premières ailes ont une aréole et que le papillon possède des stemmates, mais ils sont petits.

Passant aux caractères qu'on peut considérer comme génériques, je vois que les yeux sont nus, non ciliés, et que le front s'avance en une petite pointe, un peu comme chez le genre *Gortyna*, chez lequel ce caractère est cependant plus prononcé. De ce genre, la *radians* s'éloigne à la première vue par la forme des ailes antérieures allongées à sommet arrondi, au lieu de triangulaires à sommet pointu. De même la vestiture du thorax est tout-à-fait arrondie, sans crêtes d'aucune sorte. Le genre auquel appartient la *radians* ne peut donc se trouver dans le voisinage de *Gortyna*, mais en la comparant aux autres Noctuélites de la Faune Palaearctique, on est très-naturellement conduit à chercher sa place auprès du genre *Brithys* Hübn., Led. (*Glottula* Guenée). La forme des ailes et l'aspect général des espèces composant ce genre dénotent une parenté réelle. Cependant, les yeux velus, le front arrondi et les antennes très-courtes de *Brithys* sont des obstacles très-forts et pleinement suffisants pour empêcher de classer notre espèce dans ce genre. Toutefois, c'est dans la sous-famille IIe, les Glottulidae Guenée, que se place assurément la

Notes from the Leyden Museum, Vol. XV.

radians, mais aucun des trois autres genres qui, outre le genre *Glottula* Guenée, composent ce groupe, ne peut la recevoir. Je ne possède pas l'espèce du genre *Callyna* Guenée, mais comme l'auteur indique que la nervure indépendante des secondes ailes (la nervure 5 de Herrich-Schäffer et de Lederer) est aussi forte que les autres, ce qui n'est pas précisément le cas pour la *radians*, et que les mêmes ailes sont larges et sinuées, ce qui n'est non plus vrai pour elle, je cherche ailleurs. Chez le genre *Polytela* Guenée, dont je possède la *gloriosa*, je trouve des yeux velus et un front bombé, arrondi. Chez le genre *Noropsis* Guenée, que je possède aussi, les yeux sont nus, mais le front est encore plus fortement bombé et de plus la nervure 5 des secondes ailes est non seulement aussi forte que les autres mais insérée auprès de la nervure 4 et recourbée à sa naissance. Tout porte donc à considérer la *radians* comme formant un genre distinct, pour lequel je crois que nous pouvons sans inconvénient adopter le nom d'*Apsarasa* Walker, en suivant l'indication donnée par Mr. Moore qui décrit une seconde espèce dans les Proceedings of the Zoological Society of London, 1877, p. 604, dont je parlerai aussitôt.

Pouvant considérer les caractères génériques comme suffisamment établis, nous passons aux caractères spécifiques. Pour ceux-ci, je puis renvoyer à la description de Mr. Westwood, qui est pleinement suffisante, les petites divergences de la figure peuvent être mises sur le compte du coloriste. Il est vrai que je note aussi quelques différences avec mes exemplaires dans la forme des taches jaunes qui bordent les ailes antérieures, mais assurément on ne peut y attacher aucune importance. Je pense qu'on ne trouvera pas deux exemplaires tout-à-fait égaux de cette espèce. Aussi la seconde espèce du genre *Apsarasa*, décrite par Mr. Moore (Proceed. Zool. Soc. London, 1877, p. 604) sous le nom de *figurata*, provenant des îles Andaman méridionales et basée sur la moindre dimension des taches susdites, sur la forme un peu différente de la plus grande

Notes from the Leyden Museum, Vol. XV.

tache du bord intérieur ("hind margin" de Mr. Moore), sur la moindre étendue du blanc des ailes postérieures et sur le blanc aussi plus réduit du bout et du dessous de l'abdomen, n'est donc certainement qu'une variété légère de la *radians*.

Dans les *Annals and Magazine of Natural History*, 5th Series, vol. VII, p. 37 (1881) Mr. Butler a décrit comme troisième espèce du genre *Apsarasa*, un Lépidoptère de l'Afrique occidentale, sous le nom de *liturata*. C'est la même que: *Hypsa concinnula* Mabille, Bull. Soc. Zool. de France, 3, p. 85 (1878), — *id.*, Annal. Soc. Ent. de France, 5^e Série, IX, p. 294, Pl. 6, fig. 2 (1879), et aussi que *Mila hebraica* Aurivillius, Ent. Tidskr. 12, p. 228, Tab. 1, fig. 3 (1891), comme Mr. Aurivillius le relève fort-à-propos: Ent. Tidskr. 13, p. 187 (1892).

Concinnula est certainement le nom spécifique le plus ancien, mais il est aussi hors de doute que l'espèce n'appartient pas au genre *Hypsa*. Elle a, au contraire, beaucoup d'affinité avec le genre *Apsarasa* comme le dit Mr. Aurivillius, qui établit pour elle, sous le nom de *Mila*, un nouveau genre, se distinguant principalement d'*Apsarasa* par la protubérance du front plus obtuse, car elle n'est pas placée plus haut que chez la *radians*. On ne peut dire non plus que les ailes antérieures soient plus allongées chez la *radians*: ceci ne s'applique qu'à la femelle, celles du mâle de la *radians* sont plus courtes.

Mr. Aurivillius ne dit rien des yeux de la *concinnula*, ni si elle a une trompe ou non. Une description détaillée de la nervulation n'aurait été non plus superflue. Du reste, il est absolument hors de doute que ni le genre *Apsarasa*, ni le genre *Mila*, appartiennent à la sous-famille Agaristidae des Lithosina.

La *radians* n'est maintenant connue d'Assam (Westwood), de Sumatra (Musée de Leide), des îles Aroe et Key (ma collection) et des îles Andaman (var. *figurata* Moore).

Mes deux mâles ont une envergure de 37 et 42 millimètres, la femelle de 49 millimètres.

Rotterdam, Janvier 1893.

NOTE XXII.

ON TWO NEW SPECIES OF PACHYCEPHALA
FROM SOUTH CELEBES

BY

J. BÜTTIKOFER.

While looking through the species of the genus *Pachycephala* in the Leyden Museum, I met with two species which will prove to be new to science. They were collected in 1878, in the district of Macassar, South Celebes, by the well-known Dutch Naturalist Teysmann, and they will form the second and third species hitherto with certainty stated from Celebes, the first being *P. sulfureiventer* (Walden) from North Celebes.

1. *Pachycephala teysmanni*, n. sp.

Similar to *P. orphea* Jard. from Timor, with the exception of the ashy gray head and the much stronger bill. Entire crown, including forehead, nape, lores, sides of head and ear-coverts, uniform ashy gray without any tinge of olive; mantle, back, rump, upper tail-coverts and tail above and below olive-green; the rump, upper tail-coverts and outer edge of tail-feathers strongly tinged with yellow; wings blackish, the primaries edged on the basal half with yellowish green, on the terminal half with pearly gray, the secondaries and upper wing-coverts more broadly edged with yellowish green, edge of wing yellow. Chin and throat white, breast, flanks and abdomen pale fawn, the latter with a yellowish hue, under tail-coverts bright

Notes from the Leyden Museum, Vol. XV.

yellow, thighs yellowish green, under wing-coverts and inner edge of quills from underneath pale fawn. Bill black, feet brown.

One of the three specimens, probably not fully adult, differs from the two other in having the olive edges to the inner secondaries strongly tinged with fawn, and some fawn-colored feathers are also found on the gray head and hind neck. All three specimens are unsexed, but judging from analogy in the closely allied *P. orphea*, the female is quite alike the male.

Wing 7,1—7,3 cm., tail 6, culmen 1,7, tarsus 2.

2. *Pachycephala meridionalis*, n. sp.

Similar to *P. sulfureiventer* (Wald.) from North Celebes, but differs in the browner tinge of the upper surface and in the somewhat larger size. The upper surface is reddish brown, with hardly any tinge of the olive which characterizes the northern form; chin and throat are less pure white, the fawn-color on the chest a trifle darker, the yellow on lower breast, abdomen and under tail-coverts by far not so rich. Bill black, feet brown.

	Wing	tail	culmen	tarsus
<i>P. sulfureiventer</i> :	7,7—7,8;	5,7—6;	1,6;	2 cm.
<i>P. meridionalis</i> :	8,2;	6,5—6,7;	1,7;	2 cm.

Of this southern representative of *P. sulfureiventer* our Museum contains two probably adult, but unsexed specimens.

Leyden Museum, January 1893.

NOTE XXIII.

ON TWO NEW SPECIES OF THE GENUS STOPAROLA
FROM CELEBES

BY

J. BÜTTIKOFER.

Among the specimens of *Stoparola* in the Leyden Museum there are four from Celebes which prove to belong to two distinct and hitherto undescribed species.

1. *Stoparola septentrionalis*, n. sp.

This species might, with regard to its color, the best be compared with the Indian *St. melanops*, but the inner web of the tail-feathers is black from above instead of blue, and the size is much smaller.

General color above bluish green with more or less distinct verditer-blue edgings to the feathers on back and rump; quills black, all but the two outermost primaries distinctly edged with greenish blue on the basal half of the outer web, outer secondaries broadly edged with bluish green, inner entirely bluish green on the outer web, wing-coverts of the same color as the back; tail black above and below, with the outer webs of tail-feathers bluish green like the back, this color being predominant on both webs of the innermost pair, leaving only a shaft-streak pure black. A broad loreal streak, reaching in a narrow angle to the fore-head, pure black, fore-head and a narrow streak reaching over the eye verditer-green with a silvery gloss, sides of head dark bluish green, spotted with verditer, chin, throat, chest, breast and flanks with broad, silvery verditer-blue edgings, giving these parts a more

Notes from the Leyden Museum, Vol. XV.

or less scaly appearance, feathers on centre of breast broadly edged and tipped with white, abdomen, vent and under tail-coverts nearly pure white, especially in the specimen which is said to be a female; thighs black, feathers tipped with white near the heel; edge of wing verditer-blue, under wing-coverts pure white with some black shaft-streaks, inner web of quills edged with dingy white, bill and feet black. Wing 6,8 cm., tail 5, tarsus 1,6, culmen 1,2.

Hab. North Celebes.

This species is represented by two specimens. The first is a female, collected by von Rosenberg in 1864 at Tondano, N° 511 of his Catalogue, which contains the following remarks about this bird: »frequently seen in brushwood and low trees, living upon insects. Iris brown, bill black, feet blue".

The second representative of this species is an unsexed specimen, collected by van Duyvenbode, 1866, in the District of Menado.

2. *Stoparola meridionalis*, n. sp.

Similar in color to its above described northern representative, but very much larger and stronger. Wing 8 cm., tail 6, tarsus 1,7, culmen 1,5.

Hab. South Celebes.

Two specimens (unsexed), collected by Teysmann in the District of Macassar, in 1878.

Leyden Museum, February 1893.

NOTE XXIV.

A NEW SPECIES OF THE RUTELID GENUS SPILOTA

DESCRIBED BY

C. RITSEMA Cz.

Spilota Keili, n. sp.

Calling in mind *Spilota irrorella* Casteln., but more robust and at once distinguished from that species by the different coloration (the head, pronotum, scutellum and pygidium being green with the clypeus, the lateral margins of the pronotum and two apical spots on the pygidium yellowish), and by the different sculpture of the elytra, these being regularly and deeply punctato-striate.

Length 18,5 mm. — Above: the head, pronotum, scutellum and pygidium green, the clypeus, the lateral margins of the pronotum and two apical spots on the pygidium yellow with a green tinge, the elytra ochreous, sprinkled with small brown dots which are more or less confluent especially in a transverse direction, thus forming on the sides short and narrow transverse bands; the abdominal segments show laterally, as far as they are not covered by the elytra, a triangular dark brown spot. Beneath: pale yellow with a metallic green tinge; the antennae pale brown, the apex of the anterior tibiae, the spines of the legs and the posterior tarsi dark coppery, the anterior and intermediate tarsi with a coppery tinge; the sterna, coxae and femora are covered with long colourless or pale yellow hairs.

The head is covered with very distinct punctures which are larger and closer together on the clypeus; the sides

Notes from the Leyden Museum, Vol. XV.

of the clypeus are subparallel, the anterior margin is subtruncate with broadly rounded lateral angles.

The pronotum is regularly strongly convex, with a slight trace of an impressed medial line which disappears at some distance from the base; the punctures with which the pronotum is covered are very small along the middle but stronger and denser set towards the yellow margins on which latter they are again wider apart; a small but distinct roundish impression is present on the line of demarkation between the two colours on the broadest portion of the pronotum; the sides are narrowly margined, slightly concave on the basal half, the basal angles narrowly rounded and slightly divergent; the base, which is as broad as the base of the elytra, is bisinuate, the middle lobe broad and regularly rounded. The scutellum has a regular triangular shape with convex sides and is provided with a few fine punctures.

The elytra, which at the base are as broad as the base of the prothorax, are widest at about one third of their length and thence slightly narrowing towards the end in regularly curved lines; the disk is rather flat, the sides are faintly sloping. Each elytron has sixteen striae (the sixteenth marginal) with deep and closely set punctures, which striae are for the greater part equidistant; the 2nd and 3rd striae run together posteriorly, the 6th and 7th are somewhat closer together and likewise united at the end; the 10th and 11th are already united about the middle of their length, they diverge towards and are diffuse at the base; the 12th—15th striae originate beyond the shoulder which shows a few fine punctures; the 14th and 15th striae end at two-thirds of the length of the elytron and here the 13th stria approaches the 16th or marginal one which begins at the extreme base.

The pygidium is triangular, much broader than long, rather flat, faintly impressed along the middle and covered with transverse punctures or striae.

The mesosternal process is thick at the base and slightly

Notes from the Leyden Museum, Vol. XV.

curved upwards at the end. The apical tooth of the anterior tibiae is spatulate, and the larger claw of the anterior and intermediate tarsi bifid, that of the posterior pair simple. The sides of the meso- and metasternum are densely punctured, the legs and abdomen very sparingly so.

Hab. East-Sumatra. — Found by Mr. K. E. Keil on Mount Tindjowan, in the woody country of Asahan, at an elevation of 700 Meters above the level of the sea. I have much pleasure in dedicating this beautiful insect to its captor, who presented the described specimen, together with many other interesting beetles, to the collections of the Leyden Museum.

Leyden Museum, February 1893.

NOTE XXV.

ON A NEW SPECIES OF THE GENUS GERYGONE
FROM BORNEO

BY

J. BÜTTIKOFER.

The Leyden Museum is in possession of a male and a female of a species of *Gerygone*, collected by Schwaner in Southern Borneo. These two specimens are identified by Finsch with *G. sulphurea* Wall., the typical and probably hitherto unique specimen of which species has been collected by Wallace on the Island of Solor, one of the small islands near the eastern end of Flores. As far as we may conclude from the geographical distribution of the other species of the genus, it is not very reasonable that two birds from these different localities would belong to one and the same species, and it is not without much reservation that Salvadori accepts this name in his work: *Uccelli di Borneo* ¹⁾. A year later, in his *Uccelli di Celebes* ²⁾, the learned author feels much inclined to consider our two birds to belong to a different, still undescribed species. — Sharpe, who had seen the two birds in 1878, without being able to compare them with the typical *G. flaveola*, united them with *G. flaveola* from Celebes, to which species they are certainly very closely allied.

A close examination of the birds, on the occasion of a recent review of the specimens of this genus in our Mu-

1) *Ann. Mus. Civ. Genova*, 1874, p. 246.

2) *Ann. Mus. Civ. Genova*, 1875, p. 665.

seum, convinced me that they really belong, as Salvadori already suggested, to a species different from both *G. sulphurea* and *flaveola*, and I am much pleased to name this new species, in honor of the learned Professor, who was the first to point to the probable specific difference of our specimens from Borneo,

Gerygone salvadorii.

Gerygone sulphurea Finsch, Neu-Guinea, p. 166 (1865); Salvad. (teste Finsch) Ucc. di Borneo, p. 246 (1874); id. Ucc. di Celebes, Ann. Mus. Civ. Genova, VII. p. 665, line 4 from bottom (1875).

Gerygone flaveola (part.) Sharpe, N. L. M. 1878, p. 29; id. Cat. Birds Br Mus. IV, p. 214 (1879).

Adult male: General color above ashy brown with an olive tinge, crown like back, upper tail-coverts somewhat darker brown; tail-feathers pale earthy brown with a rather broad, subterminal bar of darker brown and a white spot near the end of the inner web of all the feathers except the innermost pair, this spot being very broad on the outermost pair and becoming gradually narrower on the inner; wing-coverts like the back, primary coverts and quills dark brown, the primaries narrowly edged with gray, the secondaries more broadly edged with ashy brown, sides of face and ear-coverts ashy brown; the whole under surface sulphur-yellow, under tail-coverts paler yellow, sides of breast very obviously olive-brown, as also the thighs; under wing-coverts white with a yellowish wash, edge of wing dirty white, inner edge of quills pale vinous, bill black, feet brown. Wing 5 cm.; tail 3,5; culmen 1,1; tarsus 1,6.

Adult female: Exactly similar in color and size with the male.

This new species differs from the closely allied Celebean *G. flaveola* in the (for the size of these birds very considerable: 5 mm. —) shorter wing, in having the sides of the breast olive-brown instead of yellow, in wanting the

Notes from the Leyden Museum, Vol. XV.

whitish lores and the yellowish wash on the ear-coverts, in having the inner edge of the quills pale vinous instead of white and in having the under tail-coverts not pure white, in the upper surface being a shade darker ashy brown, and the subterminal white spot on the inner web of the tail-feathers, especially on the outermost, being much larger.

From the true *G. sulphurea*, which is not known to me *ex visu*, the Bornean species differs in having the sides of the breast olive-brown instead of plain yellow, in wanting the white loreal spot, in having the inner lining of the quills vinous instead of white, and in having the white subterminal spot on the outermost tail-feather confined to the inner web, while it is said to be found on the outer as well in *G. sulphurea* (teste Sharpe, Cat. Birds); moreover the wing in the Bornean species is longer.

Leyden Museum, February 13, 1893.

NOTE XXVI.

CHRYSOBOTHRIIS RUTILICUSPIS,
NOVA SPECIES BUPRESTIDARUM

BY

Dr. K. M. HELLER.

Ex affinitate *Ch. insolatae* Deyr. et *perplexae* Deyr. — ♀. Caput fronte impressa, circulatim striata, supra impressionem ignita, vertice viridi. Thorax viridis, lateribus late ignitus, transverse striolatus et sat dense interpunctatus, margine basali medio lobo apice truncato. Scutellum acute triangulare, coeruleum. Elytra sat dense punctata, subparallela, ultimo triente angustata, coeruleo-virescentia, utrinque macula ante medium, altera transversa in secundo triente pone marginem lateralem, sutura foveisque duabus basalibus pure virescentibus, ultimo triente, sutura excepta, ignito. Corpus infra viride, punctatum, episternis pro- et metathoracis et metasterno lateribus remote vermiculatis, abdomine lateribus nigro-coerulescenti, prosterno antice utrinque et coxis posticis aureis, episternis pro- et mesothoracis aeneis. Pedes virides, femoribus posticis tibiisque intermediis et posticis obscurioribus, tibiis anticis apice ignitis. — Long. tot. 10 mm., lat. ad hum. 4 mm.

Habitat in insula Celebes: Macassar (Dr. Platen).

Head metallic green, closely punctured, and with a roundish somewhat elliptical and transverse blackish bronze impression which is marked at the bottom with concentric ridges, the middle point of which is situated at the centre of the impression; forehead fire-red, vertex metallic green; clypeus with a deep angular emargination.

Thorax transverse, anterior margin straight, base deeply emarginate on each side, posterior angles acute, middle lobe truncate; the sides diverging rapidly for a quarter of their length, then nearly straight, behind the middle rounded and then slightly converging to the posterior angles; disk with somewhat close punctures and fine transverse ridges,

Notes from the Leyden Museum, Vol. XV.

bluish green, fire-red at the sides except at the anterior margin, the red colour extending over the thorax for about a quarter of its breadth on each side.

Elytra closely and equally punctured, $3\frac{1}{2}$ times the length of the middle line of the prothorax, sides subparallel for two-thirds of their length, posterior margin finely and remotely denticulate. Base of the elytra, as in *insolata* Deyr., with two impressions: one roundish near the suture, the other oblong and near the shoulders. Colour of elytra bluish green, the blue tint predominating on the posterior half; the suture, an ill-defined spot before the middle and a transverse one on the second third, nearer to the lateral margin, pure metallic green; the apex with a large oblong fire-red spot occupying nearly the whole last third not including the suture.

Beneath green, punctured except at the posterior margin of the abdominal segments, thinly haired; episterna of the pro- and metathorax, the sides of the metathorax and of the first abdominal segment with undulate ridges; prosternum on the anterior external margin and the posterior coxae pale coppery red; episterna of pro- and mesothorax bronzy. Sides of the abdomen blackish blue, some fine ridges along the outer margin of each segment; last segment at the apex deeply sinuate on each side (♀). Legs green, hind femora and the tibiae of the middle and hind legs darker, anterior tibiae fire-red at the apex.

This new species is closely related to *Ch. insolata* and *perplexa* Deyr. by the absence of the three small elytral impressions, by the broad, blunt tooth on the anterior femora, by the fire-red posterior angles of the prothorax, by the excavated front, by the eyes being approximate above, by the last segment of the abdomen being carinated along the middle and by the small antennal grooves.

The type-specimen (Mus. Dresden, N° H. 3386) was obtained in exchange from Mr. G. Hetzer of Dresden.

Royal Zool. Mus., Dresden, 23 February 1893.

NOTE XXVII.

ON TWO NEW SPECIES OF BIRDS FROM
SOUTH CELEBES

BY

J. BÜTTIKOFER.

Amongst the numerous birds, collected by the Dutch botanist Teysmann in the district of Macassar during the year 1878, the Leyden Museum is in possession of a specimen of the genus *Cinnyris*, which I am not able to identify with any known species and which I introduce here under the name of

Cinnyris Teysmanni.

Entire crown, sides of head, hind neck, mantle, back and rump, wing-coverts and outer edge of quills uniform earthy brown with a slight tinge of olive, upper tail-coverts purplish brown, tail-feathers purplish black, the outer webs narrowly edged with metallic green; chin and throat metallic purplish blue, flanked on both sides with a broad metallic green stripe, forming a moustachial streak which is produced down to the sides of the chest; the latter is separated from the breast by a narrow maroon-brown cross-bar which is somewhat paler than in *C. asiaticus*; breast, flanks, abdomen and under tail-coverts black with a purplish gloss, pectoral tufts bright yellow without any trace of orange-red, under wing-coverts and thighs dusky black; bill of the same size as in *C. asiaticus* and *C. zenobia*, but rather less strongly bent, black;

Notes from the Leyden Museum, Vol. XV.

feet black. Wing 5,3 cm.; tail 3,5; tarsus 1,5, bill from front 1,8.

This bird agrees, as to the color of the under-surface, very much with *C. asiaticus*, only is the maroon-brown bar across the chest somewhat paler, the abdomen and under tail-coverts are less strongly glossed with purple and the orange-red feathers in the pectoral tufts are wanting. But the bird cannot be an immature *C. asiaticus*, showing no marks of any metallic gloss on its upper-surface while the lower surface entirely presents the metallic plumage of the fully adult stage. In the transitional stages of *C. asiaticus* the upper-surface, which is much paler than in our Celebean bird, always shows strong marks of metallic blue, especially on rump and lesser wing-coverts, long before the lower-surface has assumed its full metallic plumage. This bird is rather to be placed in Captain Shelley's *Cyrtostomus* or olive-backed Asiatic group, in which the green-backed *C. zenobia* from the Moluccas would be its nearest ally.

The second species, also from the district of Macassar, belongs to the genus *Dicaeum*, and *D. Mackloti* Müll. may be considered to be its nearest ally. From this latter it differs, however, in its smaller size and in the upper-surface having a steel-blue instead of a well-pronounced purplish gloss.

I propose to name this species

Dicaeum splendidum.

Entire head, hind neck and sides of neck, mantle, back and wing-coverts steel-blue, the latter somewhat glossed with purplish, rump and upper tail-coverts scarlet, tail-feathers glossy steel-blue; chin white, throat and fore-neck scarlet, encircled by a dull black stripe which is beginning as a moustachial streak, running down along the sides of the neck and forming a rather broad black band across the chest, continued by a black stripe along

Notes from the Leyden Museum, Vol. XV.

the centre of the breast. Breast, flanks, abdomen, thighs, under tail-coverts and under wing-coverts creamy white, edge of wing dull black; bill and feet black.

D. splendidum: Wing 5,2 cm.; tail 2,7; tarsus 1,8; culmen 0,9.

D. Mackloti: Wing 5,5 cm.; tail 3; tarsus 1,8; culmen 1.

Leyden Museum, March 1893.

NOTE XXVIII.

ON THE DATES OF PUBLICATION OF THE PARTS OF
SIR ANDREW SMITH'S ILLUSTRATIONS OF
THE ZOOLOGY OF SOUTH AFRICA

BY

Dr. F. A. JENTINK,

February 1893.

Under the above title there has been published a very valuable paper in the P. Z. S. L. 1880, p. 489, written by Mr. F. H. Waterhouse. The author remarked: »As the copy here alluded to, did not contain plates xviii and xxxviii (*Mammalia*), I have examined three or four other copies; and as neither of these plates are to be found in any of these, I presume they do not exist”.

I think it is not without interest to know, that in the copy belonging to our Museum-library, plate 38 is present; plates 18 and 37 however, are absent. On plate 38 there are two figures of *Catoblepas taurina*, A. adult female, B. young.

No wonder that the named plates are not to be found in any copy, as I read at the bottom of the page, containing an index of the *Mammalia*, the following phrase: »PLATES 18 AND 37 NOT PUBLISHED”.

Notes from the Leyden Museum, Vol. XV.

NOTE XXIX.

COMPARATIVE LIST OF THE BIRDS OF HOLLAND
AND ENGLAND.

BY

F. E. BLAAUW.

Secretary Zool. Soc. of Amsterdam, C. M. Z. S., M. B. O. U.

In the following paper a list as possible complete is given of the birds of Holland and England, whilst a few lines are added to each species, to state when and where the birds occur in both countries.

It is worth of being noticed that, although Holland and England are so near each other, a great difference takes place in the habits of the same birds visiting both countries so that f. i. a number of birds being residents in England are only summer visitors in Holland.

Not less interesting is the fact that Holland, although so much smaller than the United Kingdom, is the *regular* abode at different seasons of 221 species of birds whilst the British Islands can only boast of 211 species (L. of Br. Birds, preface VI, 1883).

The *occasional visitors*, it is true, increase the *British* Avifauna with a considerable number of species, but as the *regular* visitors and residents form the real Avifauna of a country, the fact remains that Holland is the richer of the two.

Birds only occurring in England and not met with in Holland are simply mentioned and the names placed in

Notes from the Leyden Museum, Vol. XV.

brackets. A single asterisk behind the name means that the bird is a summer visitant, a double one that it is a resident.

Holland means the whole Kingdom of the Netherlands unless North or South being added to it, when it becomes the name of a province.

The classification used, is the same as the one used in the List of British birds by the Br. Orn. Union so that no synonymy is given.

This paper is divided in three parts:

Part **a** gives a short account of the principal publications on the birds of Holland, which have more or less been used for the present work.

Part **b** gives the comparative list itself with notes as to habits etc.

Part **c** contains two tables: one with the Dutch birds divided in Residents, Summer visitors and Occasional visitors, and another with the English birds as they occur in the list of the Br. Orn. Union with the addition of 10 species, by which that list is increased since 1883.

For English birds the list of the Br. Orn. Union is my chief authority, whilst the Proceedings of the Zool. Society and the Ibis etc. have been consulted for occurrences of birds posterior to 1883.

In this way 10 new species have been added to that list viz:

<i>Saxicola isabellina</i> Rüpp.	(Nature, Jan. 1888).
<i>Emberiza cioides</i> Brandt	(P.Z.S. 1889, p. 6).
<i>Tinnunculus sparverius</i> Linn.	(P.Z.S. 1884, p. 45).
<i>Anser minutus</i> Linn.	(P.Z.S. 1886, p. 420).
<i>Larus melanocephalus</i> Natt.	(P.Z.S. 1887, p. 2).
<i>Aegialitis asiatica</i> Pall.	(P.Z.S. 1890, p. 461).
<i>Pelagodroma marina</i> Reichenbach	(Ibis, 1891, p. 602).
<i>Oestrelata torquata</i> Macg.	(P.Z.S. 1891, p. 122).
<i>Anthus cervinus</i> Pall.	(P.Z.S. 1884, p. 206).
<i>Larus philadelphia</i> Gray	(P.Z.S. 1884, p. 150).

Notes from the Leyden Museum, Vol. XV.

I am indebted to Dr. Jentink for making accessible to me the extensive collections of the Leyden Museum to which of late the coll. van Wickevoort Crommelin has been added; to Mr. A. A. van Bemmelen for doing the same with the collection of the Zool. Gardens at Rotterdam and to Mr. Howard Saunders for looking over the British birds in this paper and making some personal remarks which are recognizable by the initials H.S. put in brackets.

Part a.

The publications on Dutch birds began about the year 1752 when a latin paper more or less in the form of a catalogue was published by P. H. G. Moehring.

This work was translated into Dutch and completed by A. Vosmaer who published it in the years 1764 and 1765. These two publications were nothing more than catalogues and very incomplete. The great book of Nozeman and Sepp published in 5 parts in the years 1770, 1789, 1812, 1826 and 1829, with 250 coloured plates in large folio must be regarded as the standard work on Dutch Ornithology. This work not only gave a very accurate list of the birds up to that time observed in the Netherlands, but also a very good description of the birds themselves and their habits.

In 1815 C. J. Temminck published the first part of his *Manuel d'Ornithologie* in which, besides remarks on the avifauna of Europe in general, much was published that was new on the Dutch species.

In 1828 H. Schlegel followed with a paper on the migration of Dutch birds, in answer to a question put by the Dutch Society of Sciences.

Then come a few publications of less importance whereafter, in 1852, prof. H. Schlegel published his list of birds observed in Holland in a wild state ¹).

1) Naamlijst der tot heden (April 1842) in de Nederlanden in den wilden staat waargenomen vogels (Bouwstoffen voor eene Fauna van Nederland, bijeen-verzameld door J. A. Herklots).

This list was followed in 1858 by his well known work on Dutch birds, »De Vogels van Nederland" ¹⁾ with 362 coloured plates and which is certainly the best work ever published on that subject, although since that time much has been altered in our avifauna and several species have been added to his list.

In 1860 appeared another book from the hand of Schlegel on the birds of the Netherland, making part of a great work on the Dutch fauna under the general title: »De Dieren van Nederland", published by A. C. Kru-
seman at Haarlem. The ornithological part of this work contains, besides the 263 pages of letterpress, 18 beautiful and most interesting plates representing different landscapes with miniature bird-drawings and 35 plates with the heads of all the species treated in the letterpress. — A second edition of this volume was published in 1878 at the office of Funke, Amsterdam.

Since that time several publications on that subject have appeared but they were with one exception (H. Koller, *naamlijst van in Nederland in den vrijen natuurstaat waargenomen vogels*) ²⁾ — papers on local observations. Among them the most serious are the observations published by J. P. van Wickevoort Crommelin in

- a. Nederl. Tijdschrift voor Dierkunde, III, 1866, pp. 242—248.
- b. Archives Neerlandaises, II, 1867, pp. 66—68. Notes Ornithologiques.
- c. Idem IV, 1869, pp. 231—238. Idem sur la faune des Pays-Bas.
- d. Idem IV, pp. 379—398. Remarques sur la faune de la Hollande.
- e. Idem X, 1875, pp. 166—180.

1) De Vogels van Nederland beschreven en afgebeeld door H. Schlegel. Met 362 gekleurde platen. Leyden, D. Noothoven van Goor, 1858.

2) Bijdragen tot de Dierkunde, 1888.

- f. Tijdschrift v. Dierkunde, V, 1880, pp. 32—37.
- g. Nederl. Tijdschrift v. Dierkunde, I, 1863. Notice sur les canards observés en Hollande.
- h. Idem II, 1865, pp. 294—297. Bastaarden van *Anas boschas* en *A. crecca* en *Anas crecca* en *A. penelope*.
- i. Idem III, 1866, pp. 309—312. Description d'un canard Hybride, *Anas boschas* et *Anas acuta*.
- k. Archives Neerlandaises, II, 1867, pp. 447—452. Contributions à l'hybridologie ornithologique. *Cygnus olor*, *Anser cinereus domesticus* etc.
- l. Idem VII, 1872, pp. 130—139. Notes sur quelques canards observés en Hollande.
- m. Idem VIII, 1873, pp. 297—322. Notes sur les rales des Pays-Bas.
- n. Nederl. Tijdschrift voor Dierkunde, I, 1863, pp. 219—227. Observations sur *Syrnhaptes paradoxus*.

The very extensive collection of stuffed Dutch birds collected by this gentleman were given after his death in 1891 to the Leyden Museum as he had expressly desired.

Those of A. A. van Bemmelen published in the *Bouwstoffen*, II, p. 2, 1856, bl. 119—130. On birds observed on the island Rottum. Idem in *Jaarboek van Natura Artis Magistra*, 1856, bl. 131—141. Birds observed on the coast of the North Sea.

For birds occurring in the North, especially in Friesland ¹⁾, the publications of H. Albarda are of great interest, who also has given at irregular intervals in the *Tijdschrift der Dierkundige Vereeniging*, accounts of rare birds observed in the Netherlands at different periods ²⁾.

Besides the mentioned publications some others of less importance appeared chiefly treating local questions — and amongst them I must not forget two interesting papers

1) H. Albarda. Naamlijst der in de provincie Friesland in wilden staat waargenomen vogels. *Bouwst.* III, stuk 4, 1866, pp. 298—333.

2) See also *Journal für Ornithologie*, XXXX Jahrgang, Heft IV, pp. 417 et 895, October 1892. Ueber das Vorkommen seltener Vögel in den Niederlanden, von Herman Albarda.

published in the »Bouwstoffen voor eene Fauna van Nederland" part 3, p. 120 and in het Tijdschrift van de Dierkundige Vereeniging, serie 2, part 2, p. 158, by G. M. and H. W. de Graaf on the twice occurred capture of *Phylloscopus superciliosus* and of *Muscicapa parva*.

Part b.

Order PASSERES.

Genus Turdus.

Turdus viscivorus Linnaeus.

A regular winter visitor in Holland. According to prof. Schlegel this bird has only been found breeding on rare occasions in the province of Groningen. I myself found it breeding near Velzen (prov. Noord Holland) in the years 1881 and 1882. In other parts I believe it has only occurred on migration.

A common resident in England and Wales, rare in Scotland and Ireland.

Turdus musicus Linnaeus.

A common resident in Holland as it is in Br. Isl.

Turdus iliacus Linnaeus.

A common winter visitant in Holland and the British Islands. In Holland it has occasionally *bred* (Schleg. V. v. Ned. p. 213), in Groningen and Noord Holland.

The Zool. Society of Amsterdam recieved twice a pale buff variety of this bird.

Turdus pilaris Linnaeus.

A common winter visitor in Holland and the Br. Isl. Has been *known to breed* in Groningen (Schlegel, Vog. v. Ned. p. 210).

(*Turdus atrigularis*) Temminck.

(*Turdus varius*) Pallas.

Turdus pallens Pallas.

Notes from the Leyden Museum, Vol. XV.

A rare visitor to Holland. Has been once obtained near Velzen in Noord Holland. (Bouwstoffen, Dl. I, p. 71. Coll. v. Wickevoort Crommelin).

A second specimen was caught in the autumn of 1892 (Herman Albarda, Journal für Ornithologie, Heft, IV, October 1892, pag. 421).

Turdus sibiricus Pallas.

A rare visitor to Holland; one was caught at Noordwyk on the first of October 1856 (G. M. de Graaf, Bouwstoffen, Dl. II, p. 210 and Schleg. Vog. v. Ned. p. 214, 1860).

Turdus ruficollis Pall.

A rare visitor to Holland, has been once caught near Utrecht (Bouwstoffen, Dl. III, p. 521).

Turdus merula Linnaeus.

A common resident in Holland and the Br. Isl.

Turdus torquatus Linnaeus.

A regular winter visitor to Holland, has been known to breed in the prov. of Noord Holland, so f. i. in 's Graveland. A summer visitor to the Br. Isl.

Genus Monticola.

(*Monticola saxatilis*) (Linn.).

Genus Saxicola.

Saxicola oenanthe (Linn.).

A regular summer migrant to Holland and the Br. Isl.

Saxicola stapazina (Vieill.).

A rare straggler to Holland where it has probably bred, as a pair was observed in summer near Haarlem. (Schleg. Vog. v. Ned. p. 169). Of very rare occurrence in the Br. Isl.

(*Saxicola deserti*) Temm.

(*Saxicola isabellina*) Temm.

Notes from the Leyden Museum, Vol. XV.

Genus Pratincola.

Pratincola rubetra (Linn.).

A regular summer visitor to Holland and the Br. Isl.

Pratincola rubicola (Linn.).

A regular summer visitor to Holland, which has but very rarely been found there in winter. A resident throughout the greater part of the Br. Islands.

Genus Ruticilla.

Ruticilla phoenicurus (Linn.).

A regular summer visitor to Holland and Gr. Britain, rarer in Ireland.

Ruticilla titys (Scop.).

Breeds in Holland in the provinces Gelderland, Utrecht, Groningen and Noord Brabant in small numbers. An occasional visitor elsewhere. A winter visitor to the South West of Gr. Britain.

Genus Cyanecula.

Cyanecula Wolfi (Brehm).

A summer visitor to Holland, where it breeds; of rare occurrence on migration in Gr. Britain.

Cyanecula suecica (Linn.).

A scarce summer visitor to Holland, where it *breeds* like the preceeding in marshy places. A rare visitor to England.

Genus Erithacus.

Erithacus rubecula (Linn.).

A common resident in Holland and the Br. Isl.

Genus Daulias.

*Daulias luscini*a (Linn.).

A regular summer visitor to Holland, being more numerous in the middle and southern provinces.

In England it breeds south of Yorkshire and east of Devonshire.

Notes from the Leyden Museum, Vol. XV.

Genus Sylvia.

Sylvia cinerea (Linn.).

A common summer visitor to Holland and the British Islands.

Sylvia curruca (Linn.).

A common summer visitor to Holland and Gr. Britain.

(*Sylvia orphia*) Temm.

Sylvia atricapilla (Linn.).

In Holland a common summer visitor in the higher eastern provinces; on migration or irregularly breeding in the western provinces.

A common summer migrant to England and Wales, rare to Ireland and Scotland.

Sylvia hortensis Bechstein.

One of Holland's most common summer visitors, also common in Gr. Britain and Ireland.

Sylvia nisoria (Bech.).

Has been twice obtained in Holland, in Groningen (18th May 1860 and 15th April 1861, Museum of Leyden, Bouwstoffen, Dl. III, p. 520). Of very rare occurrence in England.

Genus Melizophilus.

(*Melizophilus undatus*) * * (Bodd.).

Genus Regulus.

Regulus cristatus (Linn.).

A common resident in Holland and the Br. Isl.

Regulus ignicapillus (Temm.).

A common winter migrant to some parts of Holland, so f. i. to the provinces Noord Holland and Utrecht. An accidental visitor to England.

Notes from the Leyden Museum, Vol. XV.

*Genus Phylloscopus.**Phylloscopus superciliosus* (Gmel.).

An accidental visitor to Holland and England. Caught in the town of Leiden 15 Sept. 1861: Coll. G. M. and H. W. de Graaf (H. W. de Graaf, Bouwst. part III, p. 520) and on 12 April 1878 near the Hague: Coll. G. M. and H. W. de Graaf.

Phylloscopus rufus (Bech.).

A common summer visitor to Holland and the Br. Isl.

Phylloscopus trochilus (Linn.).

A common summer visitor to Holland and the Br. Isl.

Phylloscopus sibilatrix (Bech.).

A common summer visitor to Holland and the Br. Isl.

*Genus Hypolaïs.**Hypolaïs icterina* (Vieill.).

A common summer visitant to Holland, breeding freely even in small gardens.

An accidental visitor in the Br. Isl.

*Genus Aedon.**(Aedon galactodes)* (Temm.).*Genus Acrocephalus.**Acrocephalus streperus* (Vieill.).

A common summer visitor to Holland, breeding in most places where reed grows. A summer visitor to the Br. Isl.

Acrocephalus palustris (Bech.).

In Holland a regular summer visitor, breeding along the water-sides.

A rare summer visitor in England in the southern counties.

Acrocephalus turdoides (Meyer).

A common summer visitor to Holland, breeding often in large numbers in suitable localities, so f. i. in the prov.

Notes from the Leyden Museum, Vol. XV.

Noord Holland. The wonderfull nest is easy to find the bird singing loudly perched on the top of a reed close by it.

In England this bird is an accidental visitor.

Acrocephalus aquaticus (Gmel.).

An occasional visitor to Holland; was caught in two specimens in September 1887 at IJmuiden (Zool. Soc. Museum of Amsterdam).

Of rare occurrence in England.

Acrocephalus phragmitis (Bech.).

A common summer visitor to Holland and Gr. Britain.

Genus Locustella.

Locustella naevia (Boddaert).

A summer visitor to the sea-coast of Holland; also common in the Br. Isl.

Locustella luscinioides (Savi).

Has been rarely found breeding along the large rivers of Holland.

A rare summer visitor to England.

Genus Accentor.

Accentor modularis (Linn.).

A common resident in Holland and the Br. Isl.

(*Accentor collaris*) (Scopoli).

Genus Cinclus.

Cinclus aquaticus Bech.

A rare accidental visitor to Holland; resident on the mountain-streams of the Br. Isl.

(*Cinclus melanogaster*) C. L. Brehm.

Genus Panurus.

Panurus biarmicus (Linn.).

A common summer visitor in Holland, in the provinces Zuid Holland, Noord Holland and Friesland. Leaving in autumn as a rule.

Notes from the Leyden Museum, Vol. XV.

As a nest was found with young birds as late as September in the Naarder-meer, it is probable these birds breed twice in the same season. Resident in Norfolk and Cambridgeshire.

Genus Acredula.

Acredula caudata (Linn.).

A common resident in Holland, accidentally found in Gr. Britain on the east-coast.

(*Acredula rosea*) ** (Blyth).

A common resident in England, which I think highly probable never leaves the Br. Islands. In Holland longtailed tits with white heads and birds with striped heads constantly mix and breed together, which last thing they would probably not do if they belonged to different species. I am therefore inclined to think that so-called specimens of *Acredula rosea* of the continent are simply not quite mature specimens (as far as the colouring of the feathers goes) of *Acredula caudata*.

Genus Parus.

Parus major Linn.

A common resident in Holland and the Br. Isl.

Parus ater Linn.

A common winter visitant in Holland occurring in small numbers, generally two or three, mixed with the more numerous troops of *Parus major*. It has bred now and then in Gelderland, Noord Brabant and Noord Holland. In England, if the specific distinction of *Parus britannicus* holds good, it is a rare visitor.

(*Parus britannicus*) ** Sharpe and Dresser.

Parus palustris Linn.

A common resident in Holland and the Br. Isl.

Parus coeruleus Linn.

A common and numerous resident in Holland and the Br. Isl.

Notes from the Leyden Museum, Vol. XV.

Parus cristatus Linn.

Occurs in Holland in winter in small numbers, generally in company of other tits.

It breeds, but not commonly in the provinces Noord Brabant and Gelderland, Groningen and probably also in Noord Holland, as I have observed it there in pairs as late as the month of May.

In the Br. Islands it has only been found breeding in Scotland, being a rare visitor elsewhere.

*Genus Sitta.**Sitta caesia* Wolf.

A common resident in Holland in all wooded districts.

In England and Wales it is a resident, in Scotland it is rare, in Ireland it is quite wanting.

*Genus Troglodytes.**Troglodytes parvulus* Koch.

A common resident in Holland where its merry little voice is heard all the year round in suitable localities. Common in the Br. Islands.

*Genus Motacilla.**Motacilla alba* Linn.

A common summer visitor to Holland, generally coming in April and leaving in September. Has exceptionnally remained all the winter over.

A rare straggler to the south of England and Ireland.

Motacilla lugubris Temm.

A rare visitor to Holland, appearing generally in spring to stay a few days only. Has once bred in the prov. of Zuid Holland (Tijdschrift v. Dierkunde, Dl. III, bl. 245). A common resident in the Br. Islands, partially migratory.

Motacilla melanope Pall.

An irregular winter visitant to Holland; being often

Notes from the Leyden Museum, Vol. XV.

found however in rather large numbers when it does make its appearance.

The neighbourhood of the Hague seems to be one of its favourite resorts on those occasions.

A resident in different places of the British Islands.

Motacilla flava Linn.

A common summer visitor to Holland, breeding in large numbers in the low marshy districts.

An occasional visitor to the Br. Isl.

Motacilla Rasi (Bonaparte).

A rare straggler on passage in spring in Holland.

A common summer visitor to the British Islands; not so numerous in Ireland.

Motacilla nigricapilla (Bonaparte).

A rare visitor to Holland (Coll. v. Wickevoort Crommelin).

Genus Anthus.

Anthus pratensis (Linn.).

A regular summer visitor to Holland, coming in March and leaving in November.

A resident in the Br. Isl.

Anthus trivialis (Linn.).

A common summer visitor to Holland and the Br. Isl.

Anthus campestris (Linn.).

A common summer visitor in Holland, breeding chiefly in the dunes along the sea-coast.

An occasional straggler to the south coast of England.

Anthus Richardi Vieill.

An occasional autumnal straggler to Holland and the British Islands.

(*Anthus spipoletta*) (Linn.).

(*Anthus cervinus*) Pall.

Anthus obscurus (Lath.).

Notes from the Leyden Museum, Vol. XV.

A common resident in the Br. Islands on the rocky coasts. An occasional visitor in spring and autumn in Holland.

Genus Oriolus.

Oriolus galbula Linn.

A common summer visitor to Holland, breeding even in the gardens of large towns if high trees are to be found there; so I observed a pair a few years ago breeding in a square of gardens in the very midst of Amsterdam.

A rare straggler on migration to England, having occasionally nested in the south.

Genus Lanius.

Lanius excubitor Linn.

Breeds in Holland in the eastern provinces. A rare straggler in autumn to the British Islands.

(*Lanius major*) Pall.

Lanius minor Gmelin.

A specimen was shot by Mr. Criellaert in his garden at Rotterdam in the autumn of 1859 or 1860. It was a male in summer plumage which is preserved in the Museum of the Zool. Garden of Rotterdam (A. A. van Bemmelen, Tijdschrift Ned. Dierk. Ver. dl. III, p. 197, 2^e serie). A rare visitor in the Br. Isl.

Lanius collurio Linn.

A summer visitor to Holland and the Br. Islands.

Lanius pomeranus Sparrmann.

Breeds in small numbers in Holland in the provinces Gelderland and Noord Brabant. An accidental visitor on migration to the Br. Isl.

Genus Ampelis.

Ampelis garrulus Linn.

An irregular winter visitor to Holland and the Br. Isl.

Notes from the Leyden Museum, Vol. XV.

*Genus Muscicapa.**Muscicapa grisola* Linn.

A common summer visitor to Holland and the Br. Islands.

Muscicapa atricapilla Linn.

Generally only a visitor on migration to Holland in spring and autumn; exceptionnally staying to breed.

A local summer visitant to Gr. Britain, unknown in Wales.

Muscicapa collaris Bechst.

In Holland a rare visitor on migration in spring. Has been observed to breed a few times (Bouwstoffen, Dl. I, bl. 66).

Has not been stated with certainty in England.

Muscicapa parva Bechst.

A rare straggler to Holland (G. M. de Graaf, Tijdschrift v. de Dierkundige Vereeniging, Serie 2, part 2, p. 158; Coll. G. M. and H. W. de Graaf).

A rare straggler to the Br. Isl.

*Genus Hirundo.**Hirundo rustica* Linn.

A common summer visitant to Holland and the Br. Isl.

*Genus Chelidon.**Chelidon urbica* (Linn.).

A common summer visitant to Holland and the Br. Isl.

*Genus Cotile.**Cotile riparia* (Linn.).

A common summer visitor to Holland and the Br. Islands.

*Genus Certhia.**Certhia familiaris* Linn.

A common resident in Holland and the Br. Isl.

*Genus Carduelis.**Carduelis elegans* Stephens.

Notes from the Leyden Museum, Vol. XV.

A summer visitor, breeding in small numbers in the eastern provinces; generally leaving in autumn but sometimes remaining through the winter.

A resident in the Br. Islands.

Genus Chrysomitris.

Chrysomitris spinus (Linn.).

A numerous winter visitor to Holland. Has been observed to breed on different occasions in the pinewoods of Gelderland and Noord Brabant. It sometimes happens that large numbers of young birds come on migration to Holland in the month of July, so f. i. in July 1891.

Breeds in Scotland being elsewhere a winter visitant.

Genus Serinus.

Serinus hortulanus Koch.

This bird seems to have a tendency of extending its habitat to the North. Was formerly of very rare occurrence in Holland but is now captured in autumn almost every year. A rare visitor to England.

Genus Ligurinus.

Ligurinus chloris (Linn.).

A common summer visitant to Holland; generally, but not always, leaving in autumn.

A resident in most parts of the Br. Isl.

Genus Coccothraustes.

Coccothraustes vulgaris Pallas.

Breeds in Holland in small numbers in the woods of Noord Holland, Gelderland, Utrecht and Noord Brabant. On migration elsewhere. Breeds in different parts of the Br. Islands.

Genus Passer.

Passer domesticus (Linn.).

A common resident in Holland and the Br. Islands.

Notes from the Leyden Museum, Vol. XV.

Passer montanus (Linn.).

A common resident in Holland and most parts of the Br. Islands.

Passer petronia (Linn.).

Has twice occurred in Holland according to Prof. Schlegel (Schl., V. v. Ned., p. 327). Bought in 1866, coll. v. Lidth de Jeude, Leyden Museum.

Genus Fringilla.

Fringilla caelebs Linn.

A common resident in Holland and the Br. Islands.

Fringilla montifringilla Linn.

A common winter visitor to Holland and the Br. Islands. Has once bred in Pertshire (L. Br. B. p. 52).

Genus Linota.

Linota cannabina (Linn.).

A common summer visitor to the dunes and heathery districts of Holland. Generally leaving in autumn.

A resident in the Br. Isl. as a rule.

Linota linaria (Linn.).

A common winter visitor to Holland. Of irregular occurrence in winter in the Br. Islands.

Linota rufescens (Vieill.).

A winter visitor to Holland, a resident in Scotland and the North of England, a winter visitor elsewhere.

(*Linota Hornemanni*) Holböll.

Linota flavirostris (Linn.).

A winter visitant to Holland, a resident in some parts of Gr. Britain.

Linota Holböllii (Brehm).

If this is a good species it also occurs in Holland on migration.

Notes from the Leyden Museum, Vol. XV.

Genus **Carpodacus.**

Carpodacus erythrinus (Pallas).

Has twice occurred in Holland in the years 1860 and 1864 (Nederl. Tijdschrift voor Dierkunde, Dl. III, p. 246) and is a rare visitor to England (L. of Br. B. p. 55).

Genus **Pyrrhula.**

Pyrrhula europaea Vieill.

A winter visitant to Holland, breeding in small numbers in the provinces Gelderland and Noord Brabant. Resident in the Br. Isl.

Genus **Pinicola.**

Pinicola enucleator (Linn.).

Has once been obtained in Drenthe during the winter of 1890/91 (Zool. Museum of the University at Groningen).

Of very rare occurrence in the Br. Islands.

Genus **Loxia.**

Loxia pityopsittacus Bechst.

A rare irregular visitor to Holland and Gr. Britain.

Loxia curvirostra Linn.

An irregular visitor to Holland, regularly breeding in the Br. Islands (H. S.).

(*Loxia leucoptera*) Gmelin.

Loxia bifasciata (C. L. Brehm).

Has occurred a few times in Holland and the Br. Islands.

Genus **Emberiza.**

(*Emberiza melanocephala*) Scop.

Emberiza miliaria Linn.

Breeds in small numbers in Holland in the North, in Gelderland and Noord Brabant, on migration elsewhere.

Resident or locally migrant in cultivated districts of the Br. Islands.

Notes from the Leyden Museum, Vol. XV.

Emberiza citrinella Linn.

Resident in Holland and the Br. Isl.

Emberiza cirrus Linn.

A rare straggler to Holland, a local resident in the South of England.

Emberiza hortulana Linn.

A regular visitor on migration in spring, breeding in Holland in small numbers in the provinces Gelderland and Noord Brabant, a rare straggler to Gr. Britain.

Emberiza cia Linn.

Has once occurred in Holland in the year 1876, being captured near Nijmegen (H. Koller, Naaml. Nederl. Vogels, bl. 37).

Has not been observed in the Br. Isl.

(*Emberiza cioides*) Brandt.

Emberiza rustica Pallas.

One bird was caught at Harderwijk, 24th of October 1888 (Zool. Society's Museum at Amsterdam). Of rare occurrence in England.

Emberiza aureola Pallas.

Has occurred in Holland near Harderwijk (Gelderland) on the 14th of October 1890, when it was taken (Zool. Soc. Mus. at Amsterdam).

Emberiza pusilla Pallas.

Has occurred a few times in Holland, an accidental visitor to the Br. Isl. (Zool. Mus. Leyden and Zool. Society's Mus. at Amsterdam).

Emberiza schoeniclus Linn.

Breeds in suitable localities all over Holland, generally leaving in autumn. Resident in the Br. Isl.

Genus Calcarius.

Calcarius lapponicus (Linn.).

On migration in small numbers in autumn and winter in Holland, a rare autumnal visitor in the Br. Islands.

Notes from the Leyden Museum, Vol. XV.

Genus Plectrophanus.

Plectrophanus nivalis (Linn.).

A regular winter visitant to Holland. A male in full colour was caught in the end of July 1891 near Harderwijk (Gelderland). Breeds in Scotland and is elsewhere a winter visitor to the Br. Islands.

Genus Sturnus.

Sturnus vulgaris Linn.

A common summer visitant to Holland, remaining sometimes in small numbers all through the winter, a resident locally migrant in the Br. Isl.

Genus Pastor.

Pastor roseus (Linn.).

A rare straggler to Holland, generally observed in autumn in young specimens. An irregular autumnal visitor to the Br. Islands.

Genus Pyrrhocorax.

(*Pyrrhocorax graculus*) ** (Linn.).

Genus Nucifraga.

Nucifraga caryocatactes (Linn.).

A very irregular autumnal visitor to Holland, sometimes however appearing in large numbers, so f. i. in the autumn of the year 1885. In 1886 some birds were also seen but they were not so numerous. Of rare occurrence in the British Islands.

Genus Garrulus.

Garrulus glandarius (Linn.).

A common resident in Holland. In autumn large numbers of wanderers join these residents for a couple of months, disappearing afterwards. A resident in England in the southern parts.

Notes from the Leyden Museum, Vol. XV.

*Genus Pica.**Pica rustica* (Scopoli).

A common resident in Holland and the Br. Islands.

*Genus Corvus.**Corvus monedula* Linn.

A common resident in Holland and the Br. Islands.

Corvus corone Linn.

A common resident in Holland, England and Wales, rarer in Scotland and Ireland.

Corvus cornix Linn.

A common winter visitant to Holland. Has once been observed to breed in Friesland (Koller, Nederl. Vogels, p. 33). Breeds in Scotland and Ireland, a winter visitor elsewhere.

Corvus frugilegus Linn.

A common resident in Holland and the Br. Islands.

Corvus corax Linn.

Resident in small numbers in Holland, but only in such places where large old trees are to be found. Resident in the Br. Isl. in suitable places.

*Genus Alauda.**Alauda arvensis* Linn.

A common summer visitant to Holland, leaving in autumn. Resident in the Br. Isl.

Alauda arborea Linn.

A spring migrant to Holland, breeding in small numbers in the province Gelderland.

A resident in England in the South and West, a winter visitor to Ireland, rare in the East and North.

Alauda cristata Linn.

Resident in Holland breeding in the dunes and heather districts. A rare straggler to the south of England.

Notes from the Leyden Museum, Vol. XV.

Genus Calandrella.

(*Calandrella brachydactyla*) (Leisler).

Genus Melanocorypha.

(*Melanocorypha siberica*) (Gmel.).

Genus Otocorys.

Otocorys alpestris (Linn.).

A regular winter visitor to Holland; of irregular occurrence in winter in Gr. Britain.

Order PICARIAE.**Genus Cypselus.**

Cypselus apus (Linn.).

A common summer visitant to Holland and the Br. Isl.

(*Cypselus melba*) (Linn.).

Genus Acanthyllis.

(*Acanthyllis caudacuta*) (Latham).

Genus Caprimulgus.

Caprimulgus europaeus Linn.

A regular summer visitor to Holland and the Br. Isl.

(*Caprimulgus ruficollis*) Temm.

Genus Picus.

Picus martius Linn.

Has occurred a few times in Holland near the german frontier.

Genus Dendrocopus.

Dendrocopus major (Linn.).

A resident in Holland in the wooded districts, being more numerous in autumn when many migrants are often passing through.

A resident in England and Scotland, a rare straggler to Ireland.

Notes from the Leyden Museum, Vol. XV.

Dendrocopus medius (Linn.).

Breeds in small numbers in Holland in the provinces Noord Brabant and Gelderland; a rare straggler elsewhere.
Has not been observed in the Br. Isl.

Dendrocopus minor (Linn.).

A rare resident breeding in Gelderland, N. Brabant and N. Holland.

On migration elsewhere.

A resident in England.

*Genus Gecinus.**Gecinus viridis* (Linn.).

A common resident in Holland and England, rare in Scotland and Ireland.

Gecinus canus (Gmel.).

A rare visitor to the south eastern provinces of Holland (Bouwstoffen, part I, p. 75). Has not occurred in the Br. Isl.

*Genus Iynx.**Iynx torquilla* Linn.

Breeds in small numbers in different parts of Holland, leaving in autumn. Occurs in small numbers in England during the summer, rarer in Scotland and Ireland.

*Genus Alcedo.**Alcedo ispida* Linn.

Generally distributed through Holland and the Br. Isl.

*Genus Ceryle.**(Ceryle alcyon)* (Linn.).*Genus Coracias.**Coracias garrula* Linn.

A rare straggler to Holland and the Br. Isl.

*Genus Merops.**(Merops apiaster)* Linn.

Notes from the Leyden Museum, Vol. XV.

Genus Upupa.

Upupa epops Linn.

Breeds in Holland in small numbers, more common on migration in spring and autumn.

An irregular visitor to the Br. Isl. on migration, having bred a few times.

Genus Cuculus.

Cuculus canorus Linn.

A common summer visitor to Holland and the Br. Isl.

Genus Coccystes.

(*Coccystes glandarius*) (Linn.).

Genus Coccyzus.

(*Coccyzus americanus*) (Linn.).

(*Coccyzus erythrophthalmus*) (Wilson).

Order STRIGES.*Genus Strix.*

Strix flammea Linn.

A common resident in Holland and the British Islands.

Genus Asio.

Asio otus (Linn.).

Resident and breeding in most dutch provinces. In autumn congregating often in large flocks sometimes together with *Asio brachyotus*. Resident in the Br. Islands.

Asio brachyotus (Forster).

Breeds in small numbers in Holland in marshy districts, being more common in autumn and winter. The same thing occurs in the British Islands.

Genus Syrnium.

Syrnium aluco (Linn.).

Resident in Holland and the British Islands.

Notes from the Leyden Museum, Vol. XV.

*Genus Nyctea.**Nyctea scandiaca* (Linn.).

An occasional winter visitant in Holland and the Br. Isl.

*Genus Surnia.**(Surnia ulula)* (Linn.).*(Surnia funerea)* (Linn.).*Genus Nyctala.**(Nyctala Tengmalmi)* (Gmelin).*Genus Scops.**Scops gui* Newton.

Has been observed for the first time with certainty in Holland in the autumn of 1890, when one was shot near Rotterdam (Zool. Gardens Museum of Rotterdam). An occasional visitor to the Br. Isl.

*Genus Bubo.**(Bubo ignavus)* Newton.*Genus Athene.**Athene noctua* (Scopoli.).

A common resident all over Holland.

A rare straggler to England.

Order ACCIPITRES.*Genus Gyps.**Gyps fulvus* (Gmel.).

Has once been obtained near Amersfoort (Utrecht), about the year 1830 (Sepp, *Vogels v. Nederland*, Dl. V, bl. 395), and probably also only once in Ireland.

*Genus Neophron.**(Neophron percnopterus)* (Linn.).

Notes from the Leyden Museum, Vol. XV.

Genus Circus.

Circus aeruginosus (Linn.).

Breeds in small numbers in Holland in marshy places, leaving in autumn as a rule.

Breeds in very small numbers in the Br. Isl.

Circus macrourus (Gmel.).

Has once occurred in Holland in 1866 (v. Wickevoort Crommelin, Archives Neerlandaises, part II, p. 71).

Circus cyaneus (Linn.).

A rare summer visitant to Holland, a rare resident in Gr. Br.

Circus cineraceus (Montagu).

Breeds in Holland in small numbers in N. Brabant, Friesland, N. and S. Holland, leaving in autumn. A scarce visitor on migration in England, Scotland and Ireland.

Genus Circaetus.

Circaetus gallicus Vieill.

Has thrice occurred in Holland, one was shot in 1848 near Rotterdam (Zool. Gardens Museum of Rotterdam).

Genus Buteo.

Buteo vulgaris Leach.

Breeds in Holland in most of the wooded districts. Has of late greatly diminished in number in the British Islands.

Genus Archibuteo.

Archibuteo lagopus Gmelin.

A regular winter visitor to Holland. An irregular but almost annual straggler to England (H. S.).

Genus Aquila.

(*Aquila clanga*) Pall.

A rare straggler to the Br. Isl.

Was believed to have been obtained in Holland (Tijd-

Notes from the Leyden Museum, Vol. XV.

schrift der Ned. Dierk. Vereeniging, deel IV, p. 70), but since, at the instigation of Mr. Herman Albarda, the specimens previously referred to *Aquila clanga* have been reexamined and found to be without exception specimens of *Aquila naevia* (Journal für Ornithologie, Heft IV, Oct. 1892, p. 417).

Aquila naevia Meyer et Wolf.

A rare visitor to Holland.

Aquila chrysaëtus (Linn.).

A very rare visitor to Holland. A resident in the mountains of Scotland and Ireland, occurring accidentally in England.

Aquila imperialis Bechstein.

Has once occurred in Holland in 1856 (Six, Bouwstoffen, part I, p. 207).

Genus Haliaëtus.

Haliaëtus albicilla (Linn.).

A regular winter visitant to the sea coast of Holland.

A resident, though almost exterminated, breeding on the rocky coasts of Scotland and Ireland. A regular or not infrequent visitor to England, from the continent.

Genus Astur.

Astur palumbarius (Linn.).

A resident, breeding in the wooded districts of Holland.

A rare straggler to the British Islands.

(*Astur atricapillus*) (Wilson).

Genus Accipiter.

Accipiter nisus (Linn.).

A regular resident in Holland and the Br. Isl.

Genus Milvus.

Milvus iclinus Savigny.

An accidental visitor to Holland in autumn and winter. Still a resident in England though nearly exterminated (H.S.).

Notes from the Leyden Museum, Vol. XV.

Milvus migrans (Boddaert).

Has occurred a few times in Holland on migration, has once occurred in the British Islands (L. Br. B. p. 99).

Genus Elanoides.

(*Elanoides furcatus*) (Linn.).

Genus Pernis.

Pernis apivorus (Linn.).

A scarce summer visitor to Holland, breeding in the provinces N. Brabant, Groningen and N. Holland.

A rare summer visitor to the Br. Isl., sometimes breeding there.

Genus Hierofalco.

Hierofalco gyrfalco Linn.

Visits irregularly the coasts of Holland on migration, one was obtained, Oct. 1849, near Noordwijk (Bouwstoff. prt. I, p. 61. Leyden Museum), an other one on 3 Dec. 1864, near Zandvoort (Nederl. Tijdschrift v. de Dierkunde, prt. III, p. 243). — See also prof. Schlegel, Vog. v. Ned. p. 12 and Revue critique des oiseaux d'Europe, seconde partie, pag. 5, both implying the probability of it being only the norwegian form that visits Holland. Has *once* occurred in England (Seebohm Hist. B. B. i. p. 19).

(*Hierofalco candicans*) (Gmelin).

(*Hierofalco islandicus*) (Gmelin).

Genus Falco.

Falco peregrinus Tunstall.

A visitor to Holland on migration. Formerly a common resident in the Br. Isl., now getting scarce.

Falco barbarus Linn.

Has twice occurred in Holland. The last time in 1886 near Cromvoirt (Museum Zool. Society of Amsterdam).

Notes from the Leyden Museum, Vol. XV.

Falco subbuteo Linn.

A regular summer visitant to Holland and the British Islands.

Falco aesalon Tunstall.

On migration in spring and autumn in Holland.

In the Br. Isl. a winter visitor; breeding in the North (L. Br. B. p. 103).

Genus Tinnunculus.

(*Tinnunculus vespertinus*) (Linn.).

(*Tinnunculus alaudarius*) (Gmelin).

A numerous resident in Holland, sometimes leaving in autumn. A resident in the Br. Isl.

(*Tinnunculus cenchris*) (Naumann).

(*Tinnunculus sparverius*) (Linn.).

Genus Pandion.

Pandion haliaëtus (Linn.).

A rare visitor to Holland; formerly breeding there.

A regular visitor to the British Isl.; still breeding in Scotland.

Order STEGANOPODES.

Genus Phalacrocorax.

Phalacrocorax carbo (Linn.).

A common resident in Holland, breeding on the ground or, if in trees, generally in company with *Ardea cinerea*. Common in the Br. Isl., breeding on the sea-cliffs and on inland waters.

Phalacrocorax graculus (Linn.).

A rare straggler to Holland.

A common resident on the rocky coast of the Br. Isl.

Genus Sula.

Sula bassana (Linn.).

Notes from the Leyden Museum, Vol. XV.

An occasional straggler to Holland in stormy weather.
A resident, breeding on the rocky coasts of the Br. Isl.

Order HERODIONES.

Genus Ardea.

Ardea cinerea Linn.

A common resident in Holland and the Br. Islands.

Ardea purpurea Linn.

A common summer visitor in Holland in the south western provinces where it breeds. Rarer in other places. It breeds in reed covered marshes. The nests are found in their favourite breeding places often in large numbers together. They are about three feet above the water and are made of the reed itself which is bent down so as to make a platform. The bluegreen eggs are almost invariably four in number and as the young vary very much in size in the same nest; it is quite probable that the old bird begins to incubate directly after the first egg is laid, and that she does not lay every day.

A rare straggler to the Br. Isl.

Ardea alba Linn.

An accidental visitor to Holland and the Br. Isl.

Ardea garzetta Linn.

Of accidental occurrence in Holland and the Br. Isl.

(*Ardea bubulcus*) Audouin.

Ardea ralloides Scopoli.

A rare visitor on migration to Holland and the Br. Isl.

Genus Ardetta.

Ardetta minuta (Linn.).

A regular summer visitant to watery reedgrown districts, where it breeds. A not very numerous visitor to the Br. Isl.

Genus Nycticorax.

Nycticorax griseus (Linn.).

Notes from the Leyden Museum, Vol. XV.

Breeds in small numbers in the province Zuid Holland. It makes its nest on trees. Leaves in autumn.

A rare straggler to the Br. Isl.

Genus Botaurus.

Botaurus stellaris Linn.

A regular but not numerous summer visitor to Holland, where it breeds in marshes.

A formerly common *regular visitor* to the Br. Isl. in cool weather (H. S.).

(*Botaurus lentiginosus*) (Montagu).

Genus Ciconia.

Ciconia alba Bechstein.

A regular summer visitor to Holland, more numerous in the western provinces, generally coming in march and leaving about the 20th of August. The nest is made on flat chimney-tops, on a wheel placed on the top of a long pole, or on trees that have lost their crown so as to make a suitable foundation for the large nest. — A rare straggler to the Br. Isl.

Ciconia nigra (Linn.).

A rare straggler to Holland and the Br. Isl.

Genus Platalea.

Platalea leucorodia Linn.

Formerly a very numerous summer visitor to Holland, where it bred in large colonies in several localities.

As in later years so many marshes and lakes have been drained, their breeding places have considerably decreased, so that only *two* colonies remain which are in the prov. Noord Holland.

The nest is from one to three feet high, generally built in shallow places of the marsh so that it reposes on the mud. If the water is deeper it is more or less floating on the water but is always made of, and surrounded entirely by reed — so that it never floats about.

Notes from the Leyden Museum, Vol. XV.

The eggs are three, or very seldom four in number and the young which are generally hatched in June differ considerably in size in the same nest, so that the largest of them is often almost completely feathered whilst the smallest is still in down.

It is exactly the same case as with the purple heron and has probably the same cause. Very young chicks have a short soft and bright yellow bill, the cere round it and the skin round the eyes is bright blue. After a time these fine colours fade away and the bill gets a pale flesh colour, and only several months after the birds have gone out of the nest the bill gets its proper size and colour. In the Br. Islands this bird formerly bred but is now a mere straggler.

Genus Plegadis.

Plegadis falcinellus (Linn.).

An accidental straggler to Holland and the Br. Isl.

Order ANSERES.

Genus Anser.

Anser cinereus Meyer.

Breeds in small numbers in Friesland, visiting other parts on migration in autumn and winter and is never numerous.

Breeds in the North of Scotland; a winter visitant elsewhere.

Anser arvensis Naum.

This larger form of *Anser segetum* is easily distinguished from the other by its larger size and longer bill which is orange, the black back, nail and lower mandible of it excepted; occurs in Holland in autumn and winter in large flocks.

Probably this bird does not occur in the Br. Isl. or if it does, has been overlooked as a distinct form of *Anser segetum*.

Notes from the Leyden Museum, Vol. XV.

Anser segetum (Gmel.).

Visits Holland later than the preceding generally in January and February and is never so numerous as *Anser arvensis*. A winter visitor to the northern parts of the British Islands.

Anser brachyrhynchus Baillon.

A scarce winter visitor to Holland. A regular winter visitor to the northern and eastern districts of the Br. Islands.

Anser albifrons (Scopoli).

A regular and numerous winter visitor to Holland.

Anser albifrons var. *roseipes* Schlegel (Schl., V. v. N. p. 518) is a hybrid between *Anser albifrons* and *Anser cinereus* bred in semi-confinement by the goose catchers.

Anser minutus Naum.

A scarce winter visitor to Holland, generally occurring in company of the more numerous *Anser albifrons*.

A rare straggler to England, having been observed there for the first time in 1886 (P. Z. S. 1886, p. 420).

Genus Chen.

Chen albatus (Cassin).

A rare winter visitor to Holland, which has occasionally been seen but has never been obtained, so that it is not certain whether the birds seen, are *Chen albatus* or *Chen hyperboreus*. Has occurred a few times in the Br. Isl.

Genus Bernicla.

Bernicla brenta (Pallas).

A numerous winter and spring visitor, especially to the sea coasts of Holland, sometimes occurring in very large numbers.

A winter visitor to the Br. Isl.

Bernicla leucopsis (Bechstein).

An irregular winter visitant to Holland.

A winter visitant to the Br. Islands.

Notes from the Leyden Museum, Vol. XV.

Bernicla ruficollis (Pallas).

A rare winter visitor to Holland (f. i. five specimens in the Zool. Soc. Museum and Menagerie of Amsterdam) and the Br. Isl.

Genus Cygnus.

Cygnus olor (Gmelin).

Has been obtained wild during the winter in the northern provinces of Holland. As this species is kept so much in more or less domesticated condition especially in Noord and Zuid Holland, I think it open to doubt whether they were really wild birds.

In the Br. Isl. the same thing occurs.

Cygnus immutabilis Yarrell (var. of *C. olor*).

Is kept very much like the preceding and has been shot apparently in wild state.

An occasional winter visitor to the Br. Islands.

Cygnus musicus Bechstein.

A common winter visitant to Holland and Brit. Islands.

Cygnus Bewicki Yarrell.

A winter visitor to Holland, but less frequent than *Cygnus musicus*.

A winter visitor to the Br. Isl.

Genus Tadorna.

Tadorna cornuta (Gmelin).

Breeds in different places along the sea shore of Holland also far inland, in old rabbit-holes often at a great distance from the water. Resident in some places of the British Islands.

(*Tadorna casarca*) (Linn.).

Genus Mareca.

Mareca penelope (Linn.).

A winter visitor to Holland, seldom remaining to breed. Breeds in Scotland, on migration in winter elsewhere.

(*Mareca americana*) (Gmelin).

Notes from the Leyden Museum, Vol. XV.

*Genus Dafila.**Dafila acuta* (Linn.).

Breeds in Holland in tolerable numbers in marshes and larger pieces of water, and is found on migration in autumn more generally. A winter visitor to England, breeding in Scotland and Ireland in small numbers.

*Genus Anas.**Anas boschas* Linn.

Resident and common in Holland. A great number of migrants join these residents during the winter.

A general resident in the Br. Islands.

*Genus Chaulelasmus.**Chaulelasmus streperus* (Linn.).

A scarce summer visitant to Holland, coming in March and leaving in October.

A winter visitor to the Br. Isl., regularly breeding in Norfolk in large numbers (H. S.).

*Genus Querquedula.**Querquedula circia* (Linn.).

A summer visitor to Holland and England.

(Querquedula discors) (Linn.).*Querquedula crecca* (Linn.).

A summer visitor, generally breeding in Holland. In autumn and spring large numbers pass through the country on migration.

A resident in the Br. Isl.

(Querquedula carolinensis) (Gmelin).*Genus Spatula.**Spatula clypeata* (Linn.).

Breeds in Holland and generally leaves in autumn.

Notes from the Leyden Museum, Vol. XV.

Breeds in Brit. Islands in some districts; on migration in winter elsewhere.

Genus Fuligula.

Fuligula rufina (Pallas).

A rare straggler to Holland and the Br. Isl.; is said to have bred in Holland on the Naarder meer (Tijdschrift der Nederl. Dierk. Vereeniging, deel IV, bl. 100).

Fuligula cristata (Leach).

A winter visitor to Holland.

Breeds in several places of England and Scotland. On migration elsewhere.

Fuligula marila (Linn.).

A winter visitor to Holland and the Br. Isl. It breeds sparingly in Scotland.

Fuligula ferina (Linn.).

A winter visitor to Holland and England, breeding in several localities of the United Kingdom.

Fuligula affinis Eyton.

Has once been obtained in Holland in 1859 (Museum of Nat. History of Leyden, Bouwstoffen, Dl. III, bl. 258).

Genus Nyroca.

Nyroca ferruginea (Gmelin).

A scarce winter visitor to Holland, has been known to breed near Rotterdam.

A rare straggler to the eastern coasts of England.

Genus Clangula.

Clangula glaucion (Linn.).

A winter visitor to Holland, sometimes appearing in great numbers.

A winter visitor to the Br. Isl., especially the north.

Notes from the Leyden Museum, Vol. XV.

(*Clangula islandica*) (Gmelin).

(*Clangula albeola*) (Linn.).

Genus Cosmonetta.

(*Cosmonetta histrionica*) (Linn.).

Genus Harelda.

Harelda glacialis (Linn.).

An irregular winter visitor to Holland. A winter visitor to the Brit. Isl., breeding in Shetland in small numbers.

Genus Heniconetta.

(*Heniconetta Stelleri*) (Pallas).

Genus Somateria.

Somateria mollissima (Linn.).

A winter visitant to Holland, especially to the northern coasts and on the Zuiderzee. Breeds from the Fern Islands northwards. Elsewhere a winter visitor to the coast of the British islands.

(*Somateria spectabilis*) (Linn.).

Genus Oedemia.

Oedemia nigra (Linn.).

A numerous and regular winter visitor to Holland.

A winter visitor to the Br. Islands, breeding in the north of Scotland.

Oedemia fusca (Linn.).

A winter visitant to Holland, but less numerous than *Oedemia nigra*.

A winter visitor to the coasts of the Br. Isl., sometimes suspected of breeding in Scotland (H. S.).

(*Oedemia perspicillata*) (Linn.).

Genus Erismatura.

Erismatura leucocephala (Scop.).

Notes from the Leyden Museum, Vol. XV.

A rare straggler to Holland, has once occurred near Rotterdam in 1859 (Zool. Gard. Museum of Rotterdam) and a second time in 1874 near Zaandam (Coll. van Wickevoort Crommelin).

Genus Mergus.

Mergus merganser Linn.

A winter visitor to Holland.

A winter visitant to the British Islands, breeding sparingly in the northern half of Scotland.

Mergus serrator Linn.

A winter visitor to Holland and the Br. Islands, breeding in Scotland and Ireland.

(*Mergus cucullatus*) Linn.

Mergus albellus Linn.

A regular winter visitor to Holland.

Of irregular occurrence in winter in the Brit. Isl.

Order COLUMBAE.

Genus Columba.

Columba palumbus Linn.

A common resident in Holland and the Brit. Isl.

Columba oenas Linn.

A rare local resident, breeding in Utrecht, Gelderland, Noord Holland and Noord Brabant. This bird is generally considered to be a summer visitant only, I myself observed it at 's Graveland every month of the year.

Breeds in most parts of the Br. Islands (H. S.).

(*Columba livia*) * * Bonnaterre.

Genus Turtur.

Turtur communis Selby.

A summer visitor to Holland, breeding all over the country.

A summer visitor to the southern counties of England, rarer in the north and Ireland, a rare straggler to Scotland.

Genus Ectopistes.

(*Ectopistes migratorius*) (Linn.).

Genus Syrrhaptes.

Syrrhaptes paradoxus (Pallas).

Has occurred in large numbers in Holland and England, the last time in 1889 when several eggs were laid in the dunes near Haarlem and elsewhere, but no young birds I believe came to maturity.

Order GALLINAE.

Genus Phasianus.

Phasianus colchicus Linn.

Naturalized and common in different parts of Holland and the Brit. Isl.

Genus Caccabis.

(*Caccabis rufa*) * * (Linn.).

(*Caccabis petrosa*) (Gmelin).

Genus Perdix.

Perdix cinerea Latham.

A common resident in Holland and the Br. Isl.

Genus Coturnix.

Coturnix communis Bonnaterre.

A summer visitor to different parts of Holland, but never numerous. An irregularly distributed visitor to the Br. Islands during the summer.

Genus Lagopus.

(*Lagopus mutus*) * * (Montin).

(*Lagopus scoticus*) * * (Latham).

Notes from the Leyden Museum, Vol. XV.

Genus Tetrao.

Tetrao tetrix Linn.

A resident in the Moorlands of Drenthe and Overijssel — occurring in similar places in Scotland — it is not found in Ireland and very locally in England (H. S.).

(*Tetrao urogallus*) ** Linn.

Order HEMIPODII.*Genus Turnix.*

(*Turnix sylvatica*) (Desfontaines).

Order FULICARIAE.*Genus Rallus.*

Rallus aquaticus Linn.

Resident in Holland and the Br. Islands.

Genus Porzana.

Porzana maruetta (Leach).

A sparingly distributed summer visitor to Holland and the Br. Isl.

Porzana Bailloni (Vieillot).

A scarce summer visitor to Holland, where it breeds in different localities. An irregular visitor to the Br. Islands, having twice bred there (H. S.).

Porzana parva (Scopoli).

A rare visitor to Holland and the Br. Isl.

Genus Crex.

Crex pratensis Bechstein.

A summer visitor to Holland and the Br. Isl.

Genus Gallinula.

Gallinula chloropus (Linn.).

Resident in Holland and the Br. Isl.

Notes from the Leyden Museum, Vol. XV.

*Genus Fulica.**Fulica atra* Linn.

A numerous resident in suitable places of Holland, partially leaving in autumn.

Resident in the Br. Isl.

Order ALECTORIDES.*Genus Grus.**Grus communis* Bechstein.

A rare autumnal visitor to Holland. A rare straggler to the Br. Islands.

*Genus Otis.**Otis tarda* Linn.

An irregular winter visitor to Holland and the Br. Isl.

Otis tetraz Linn.

A rare straggler to Holland and the Br. Isl.

*Genus Houbara.**Houbara Macqueeni* (Gray).

Has once occurred in 1850 near Zeist, Utrecht (Bouwstoffen, N^o. 134, I, bl. 212), and once in England in 1847 — in Lincolnshire.

Order LIMICOLAE.*Genus Oedienemus.**Oedienemus scolopax* (Gmelin).

A sparingly distributed summer visitor to Holland, breeding in the dunes of Zuid Holland and Noord Holland and in Noord Brabant. A summer visitor to England, rare in Scotland and Ireland.

*Genus Glareola.**Glareola pratincola* (Linn.).

On specimen was caught on the 24th of July 1892 near

Notes from the Leyden Museum, Vol. XV.

Vlymen, Noord Brabant (H. Albarda, Journal für Ornithologie, Heft IV, October 1892, p. 424). A rare visitor to the Br. Islands.

Genus Cursorius.

Cursorius gallicus (Gmelin).

A rare straggler to Holland and the Br. Isl.

Genus Charadrius.

Charadrius pluvialis Linn.

A summer visitor to Holland, leaving in autumn and breeding in Gelderland, Noord Brabant and Friesland.

A resident in the Br. Isl., breeding mostly in the northern districts.

(*Charadrius fulvus*) Gmel.

Genus Squatarola.

Squatarola helvetica (Linn.).

Visits the sea coasts of Holland and the Br. Isl. in autumn and spring.

Genus Aegialitis.

Aegialitis cantiana (Lath.).

Breeds in tolerable numbers in Holland on the islands of the North Sea. More generally distributed in autumn during migration.

A spring visitor to England, breeding in small numbers on the south-coasts.

Aegialitis curonica (Gmel.).

Breeds in Holland, in Noord-Brabant and elsewhere; on migration along the sea coasts in autumn.

A very rare straggler to the coasts of the Br. Islands.

Aegialitis hiaticula (Linn.).

On migration in Holland in autumn along the sea coasts. A few pairs breed on Ameland (North Sea) and Rozenburg, near Brielle (Koller, Naaml. Ned. Vogels, p. 50).

Notes from the Leyden Museum, Vol. XV.

A common resident in the Br. Islands.

(*Aegialitis asiatica*) (Pall.).

(*Aegialitis vocifera*) (Linn.).

Genus Eudromias.

Eudromias morinellus (Linn.).

Visits Holland on migration in autumn and spring and breeds in restricted numbers in the dunes (Schleg., V. v. N., p. 415). — Breeds in the N. W. of England and in Scotland. On migration elsewhere.

Genus Vanellus.

Vanellus vulgaris Bechst.

A regular and very numerous summer visitor to Holland; breeding chiefly in Friesland, Groningen, Noord and Zuid-Holland. It leaves in autumn.

A resident in the Br. Isl., but not so numerous there as it is in Holland.

Genus Strepsilas.

Strepsilas interpres (Linn.).

A winter visitor along the sea coasts of Holland and the Br. Islands.

Genus Haematopus.

Haematopus ostralegus Linn.

Breeds in Holland in the dunes along the sea coasts. Often but not always leaving in autumn.

Resident in the north of England also; breeding plentifully in the south where localities are suitable (H. S.).

Genus Recurvirostra.

Recurvirostra avocetta Linn.

Breeds regularly in Holland on the islands of the North Sea, in Zeeland and Zuid Holland. — It leaves in autumn. A visitor to England, where it used to nest regularly (H. S.).

Notes from the Leyden Museum, Vol. XV.

Genus Himantopus.

Himantopus candidus Bonnaterre.

Has occurred a few times in Holland (Coll. H. v. d. Goor in Cromvoirt and Zool. Gardens Museum of Rotterdam). An irregular straggler to England.

Genus Phalaropus.

Phalaropus hyperboreus (Linn.).

A rare winter visitor to Holland.

A regular summer visitor to some of the islands of Scotland; elsewhere in winter, but *rarely*.

Phalaropus fulicarius (Linn.).

An irregular winter visitor to Holland and England.

Genus Scolopax.

Scolopax rusticola Linn.

Breeds in Holland in small numbers, numerous in autumn, less numerous in spring on passage.

A winter visitor to the Br. Isl., breeding in different counties; 400 or 500 nests in Sussex *alone*, annually (H. S.).

Genus Gallinago.

Gallinago major (Gmel.).

An irregular visitor in spring and autumn to Holland and the Br. Isl.

Gallinago caelestis (Frenzel).

A regular summer visitor, breeding in Friesland, Noord Brabant, Groningen and Zuid Holland, on migration elsewhere. Common in the Br. Isl.

Genus Limnocryptes.

Limnocryptes gallinula (Linn.).

A winter visitor to Holland.

According to Mr. van Bemmelen (Bouwstoffen, II, p. 127, 1856) a nest with eggs was found in the prov. of Gro-

Notes from the Leyden Museum, Vol. XV.

ningen by a man who was able to distinguish the species. Mr. v. B. did not *see* the eggs however. No other example having occurred the fact stands isolated and doubtfull. Mr. Herman Albarda of Leeuwarden doubts this species has ever bred in the north of Holland. In Schleg. V. v. N. p. 436, the instance of v. Bemmelen is alluded to.

A winter visitor to the Br. Isl.

Genus Limicola.

Limicola platyrhyncha (Temm.).

A very rare straggler to Holland. One was shot on the 15th of August 1862 at the Hoek van Holland (Nat. Hist. Museum of Leyden).

A rare visitor to the Br. Islands.

Genus Tringa.

(*Tringa maculata*) Vieillot.

(*Tringa fuscicollis*) Vieill.

Tringa alpina Linn.

A summer visitor to Holland, breeding in Friesland and the Hoek van Holland. More generally distributed on migration in autumn and spring. Chiefly a winter visitor to the British coasts, but breeds on the moors, especially in the north.

Tringa minuta Leisler.

On migration in Holland and the Br. Isl.

Tringa Temmincki Leisler.

A rare visitor to Holland and England on migration.

(*Tringa minutilla*) Vieill.

Tringa subarquata (Güldenstädt).

A winter visitor to Holland and the Br. Islands from autumn to spring.

Tringa striata Linn.

A regular winter visitor to Holland and the Br. Islands.

Notes from the Leyden Museum, Vol. XV.

Tringa canutus Linn.

A winter visitor to Holland and the Br. Islands.

Genus Machetes.

Machetes pugnax (Linn.).

A regular and numerous summer visitor to Holland in suitable localities, breeding in low marshy meadows.

Formerly breeding abundantly in the east of England, now only does so sparingly (H. S.).

Genus Calidris.

Calidris arenaria (Linn.).

A regular and numerous winter visitor to Holland and the Br. Isl.

Genus Tryngites.

(*Tryngites rufescens*) (Vieill.).

Genus Actiturus.

(*Actiturus longicauda*) (Bechst.).

Genus Tringoides.

Tringoides hypoleucus (Linn.).

A summer visitor to Holland and the Br. Isl.

Genus Helodromas.

Helodromas ochropus (Linn.).

A visitor to Holland and the Br. Isl., especially in spring and autumn.

Genus Totanus.

Totanus glareola (Gmel.).

Breeds in Holland in low marshy places. A straggler on migration in the British islands; has been known to breed (H. S.).

Totanus calidris (Linn.).

Notes from the Leyden Museum, Vol. XV.

A regular summer visitor to Holland, breeding in marshy places and lowly situated meadows. Generally leaving in autumn.

A resident in the Br. Islands.

Totanus fuscus (Linn.).

A regular visitor on migration to Holland in autumn and spring near the sea coasts.

A straggler during migration to the Br. Isl.

Totanus canescens (Gmel.).

Visits Holland on migration from autumn till spring.

The same in England. Breeds regularly in the north and west of Scotland (H. S.).

Genus Macrorhamphus.

(*Macrorhamphus griseus*) (Gmel.).

Genus Limosa.

Limosa lapponica (Linn.).

Occurs in Holland on migration in autumn and spring and sometimes remains to breed on the mouth of the Maas" (according to Schlegel, V. v. N. p. 441), but this has since not been verified.

Eggs have also been obtained near Vlymen, prov. N. Brabant (Koller, Naamlijst v. Ned. Vogels, p. 53). On migration in England.

Limosa aegocephala (Linn.).

A regular summer visitor to Holland, where it breeds on low meadows and other marshy places. It leaves early in late summer or autumn.

An autumn and spring visitor to the Br. Islands, where it formerly bred.

Genus Numenius.

(*Numenius borealis*) (Forster).

Numenius phaeopus (Linn.).

Notes from the Leyden Museum, Vol. XV.

Accurs on migration in Holland and the Br. Isl.; breeds in the Orkneys and Shetland.

Numenius arquatus (Linn.).

Breeds in Holland in the dunes and in marshy places.

It visits the sea coasts of the Br. Isl. and breeds on the moors of the British Islands.

Numenius tenuirostris (Vieillot).

A bird of this kind has been obtained in 1856 on the 5th of December near Spaarndam (Schlegel V. v. N. p. 468). A second specimen was captured on the 27th of December 1889 near Hallum in Friesland (Herman Albarda J. f. O. 1892, p. 425). Has not occurred in England.

Order GAVIAE.

Genus Sterna.

Sterna macrura Naum.

One was shot near Leyden on the 18th of October 1862. See Schlegel's Catalogue, VI, p. 16, N^o. 4.

A regular summer visitor to the British islands.

Sterna fluviatilis Naum.

A regular summer visitor to Holland; breeding in the dunes along the sea coast, or inland along the rivers, on low meadows and on floating weeds in marshes and small lakes, often found in the midst of the heath.

A summer visitor to the sea coasts and lakes of the Br. Islands.

(*Sterna Dougallii*) Montagu.

Sterna minuta Linn.

Breeds in small numbers on the sandplates of the coast of Holland, leaving early in autumn.

The same thing occurs in the Br. Isl.

Sterna caspia Pallas.

An irregular visitor to the coasts of Holland and the Br. Islands.

Notes from the Leyden Museum, Vol. XV.

Sterna anglica Montagu.

An irregular visitor to Holland and the Br. Isl.

One was shot 15 Aug. 1838 on the Brasemer-meer (Zool. Mus. of Leyden).

Sterna cantiaca Gmelin.

Breeds in large numbers on the North Sea Islands of Holland and on the dunes of Zeeland. A regular summer visitor to the British Islands.

(*Sterna fuliginosa*) Gmel.

Genus Hydrochelidon.

(*Hydrochelidon anaetheta*) Scopoli.

(*Hydrochelidon hybrida*) (Pall.).

(*Hydrochelidon leucoptera*) (Schinz).

Hydrochelidon nigra (Linn.).

A common summer visitor to Holland, breeding generally on floating weed in marshes and all larger pieces of water.

Formerly breeding in England; now chiefly occurring on migration.

Genus Anous.

(*Anous stolidus*) (Linn.).

Genus Pagophila.

(*Pagophila eburnea*) (Phipps).

Genus Rissa.

Rissa tridactyla (Linn.).

A rare winter visitor to Holland. A regular summer visitor to the northern coasts of the Br. Islands where it breeds — thousands in extreme S. W. (H. S.).

Genus Larus.

Larus glaucus Fabricius.

A winter visitor to Holland and the Br. Isl.

Notes from the Leyden Museum, Vol. XV.

Larus leucopterus Faber.

A very rare visitor to Holland (Schl. V. v. N. p. 596).
Also rare on the British coasts in winter, very rare in
England.

Larus argentatus Gmelin.

A resident in Holland and the Br. Isl.

Larus fuscus Linn.

A winter visitor to the sea coasts of Holland.

A resident in the Br. Isl., breeding in different localities.

Larus canus Linn.

A resident in Holland, breeds on the islands of the
North Sea — from where I often got eggs and young
birds. In winter it spreads over the country, visiting the
low meadows in large numbers. Breeds in Scotland and
Ireland, a visitor to England.

Larus marinus Linn.

A resident in Holland, breeding on the dunes.

A resident in the Br. Isl.

(*Larus ichthyaetus*) Pallas.

(*Larus melanocephalus*) Natterer.

Larus ridibundus Linn.

A resident in Holland, breeding in marshes. In winter
great numbers visit the canals of Amsterdam, where they
stay untill the ice is gone in spring.

A resident, partially migratory, in the Br. Isl.

Larus minutus Pall.

Breeds in small numbers on the *Hoek van Holland*, a
winter visitor elsewhere (Schl. Vog. v. Ned. p. 605).

An irregular winter visitor to England.

(*Larus philadelphia*) (Ord.).

Genus Xema.

Xema Sabinii Joseph Sabine.

Notes from the Leyden Museum, Vol. XV.

The first bird of this species was captured in Holland on the 11th of October 1892 on the Hoek van Holland (Museum Zool. Soc. of the Hague). A rare straggler to the Br. Islands.

Genus Stercorarius.

Stercorarius catarrhactes (Temm.).

A rare visitor, generally in stormy weather to the coasts of Holland. A spring and autumn visitor to the coasts of Gr. Britain and Ireland; breeding in the Shetland Islands.

Stercorarius pomatorhinus (Linn.).

An irregular visitor on migration to the coasts of Holland.

The same thing occurs in the Br. Isl., but it is there more numerous than it is in Holland.

Stercorarius crepidatus (Gmel.).

A visitor on migration to the coasts of Holland.

In the British Islands it breeds in the Orkneys, Shetlands, Hebrides and a few places in the north of Scotland; on migration elsewhere.

Stercorarius parasiticus (Linn.).

An occasional visitor on migration to the coasts of Holland and the Br. Isl.

Stercorarius cephus Keyserl. and Blas.

A rare accidental visitor to the Dutch coasts (Bouwst., part III, p. 528).

Order TUBINARES.

Genus Procellaria.

Procellaria pelagica Linn.

An irregular visitor by stormy weather to Holland. Breeds on the rocky coasts of the British Islands.

Procellaria leucorrhoa Vieill.

An irregular visitor to the coasts of Holland.

Notes from the Leyden Museum, Vol. XV.

In the Br. Isl. it occurs as a straggler on the coasts, by stormy weather, and breeds at St. Kilda, Blaskets and several other places.

Genus Oceanites.

(*Oceanites oceanicus*) (Kuhl).

Genus Pelagodroma.

(*Pelagodroma marina*) Reichenbach.

Genus Puffinus.

Puffinus anglorum (Temm.).

Has occurred a few times during heavy storms on the coasts of Holland (Schlegel, V. v. N. p. 585).

A resident in the Br. Isl., breeding on the coasts.

(*Puffinus griseus*) (Gmelin).

(*Puffinus major*) Faber.

Puffinus obscurus (Gmelin).

A rare straggler to the coasts of Holland (Temm., Bouwst., Dl. I, p. 102; Schl. V. v. N. p. 585) and the Br. Isl.

Genus Fulmarus.

Fulmarus glacialis (Linn.).

An irregular straggler to Holland by heavy storms.

In the British Islands it breeds on the St. Kilda group and on one of the Shetlands. A winter visitor elsewhere.

Genus Oestrelata.

(*Oestrelata haesitata*) (Kuhl).

(*Oestrelata torquata*) (Macg.).

Genus Bulweria.

(*Bulweria columbina*) (Moquin-Tandon).

Order PYGODES.**Genus Colymbus.**

Colymbus glacialis Linn.

A rare winter visitor to the coasts of Holland. Is believed to breed in some of the Shetland Islands.

A winter visitor elsewhere on the coasts of the United Kingdom.

Some adults often stay till June even in S. and W. (H.S.).

Colymbus arcticus Linn.

Visits Holland on migration in small numbers.

In the Br. Isl. it breeds in the north of Scotland.

Colymbus septentrionalis Linn.

Visits Holland on migration during the winter; in larger numbers than the two preceding.

Visits the British coasts on migration almost all the year round, breeding in the north of Scotland and Ireland.

Genus Podiceps.

Podiceps cristatus (Linn.).

A summer visitor to Holland, breeding on all larger lakes and marshes.

In the British Islands it breeds in small numbers on some of the lakes of England and Ireland, occurring on migration and in winter elsewhere.

Podiceps griseigena (Bodd.).

Breeds in Holland in the same places as the preceding but in smaller numbers — and occurs also on migration from autumn till spring. A rare visitor on migration in the Br. Islands.

Podiceps auritus (Linn.).

A scarce winter visitor to Holland, having bred in Noord-Brabant (Koller, Vog. v. Ned., p. 64).

Notes from the Leyden Museum, Vol. XV.

A common winter visitor to Scotland, Ireland and the northern and eastern coasts of England, less numerous elsewhere.

Podiceps nigricollis Brehm.

Visits Holland on migration in small numbers; has bred in Zuid-Holland and Noord-Brabant (Koller, *Vogels v. Ned.*, p. 65).

Of irregular occurrence on migration in the Br. Islands.

Genus Tachybaptus.

Tachybaptus fluviatilis (Tunstall).

A resident in Holland and the Br. Isl.

Genus Alca.

Alca torda Linn.

A winter visitor to Holland on migration.

A resident in the Br. Islands, breeding on the rocky coasts.

Genus Lomvia.

Lomvia troile Linn.

Occurs on the coasts of Holland as a straggler all the year round.

A resident in the United Kingdom.

Lomvia Bruennichi (Sabine).

A rare winter visitor to the coast of *Holland* (Schl., *V. v. Ned.* p. 497): doubtfully in the Br. Isl., though probably (H. S.).

Genus Uria.

Uria grylle (Linn.).

A rare winter straggler to the coasts of Holland.

In the Br. Islands it breeds on the coasts of Scotland and Ireland; occurring on migration elsewhere.

Notes from the Leyden Museum, Vol. XV.

*Genus Mergulus.**Mergulus alle* (Linn.).

An irregular visitor to the coasts of Holland; chiefly by stormy weather.

Also an irregular visitor to the British coasts, but sometimes occurring in large numbers.

*Genus Fratercula.**Fratercula arctica* (Linn.).

Of irregular occurrence as a straggler on the coasts of Holland.

Breeds in large numbers on the British coasts, migrating southwards in winter.

Part c.

TABLE OF DUTCH BIRDS.

	Residents.	Summer visitors.	Winter visitors.	Occasional visitors.	Total.
I. Passeres	23	47	18	31	119
II. Picariae	5	5	—	3	13
III. Striges	5	—	—	2	7
IV. Accipitres	4	5	5	10	24
V. Steganopodes	1	—	—	2	3
VI. Herodiones	1	6	—	5	12
VII. Anseres	4	4	21	8	37
VIII. Columbæ	1	2	—	—	3
IX. Pterocletes	—	—	—	1	1
X. Gallinae	3	1	—	—	4
XI. Fulicariae	3	3	—	1	7
XII. Alektorides	—	—	—	4	4
XIII. Hemipodii	—	—	—	—	—
XIV. Limicolæ	1	17	15	7	40
XV. Gaviae	5	4	3	10	22
XVI. Tubinares	—	—	—	5	5
XVII. Pygopodes	1	2	6	5	14
	57	96	68	94	315

Notes from the Leyden Museum, Vol. XV.

TABLE OF BRITISH BIRDS.

	Residents.	Summer visitors.	Winter visitors.	Occasional visitors.	Total.
I. Passeres	50	23	6	54	133
II. Picariae	4	4	—	10	18
III. Striges	4	—	—	7	11
IV. Accipitres	12	2	—	14	28
V. Steganopodes	3	—	—	—	3
VI. Herodiones	1	—	—	13	14
VII. Anseres	17	1	9	18	45
VIII. Columbæ	3	1	—	1	5
IX. Pterocletes	—	—	—	1	1
X. Gallinae	7	1	—	1	9
XI. Fulicariae	3	2	—	2	7
XII. Alectorides	—	—	—	4	4
XIII. Hemipodii	—	—	—	1	1
XIV. Limicolæ	3	13	13	20	49
XV. Gaviae	9	5	2	15	31
XVI. Tubinares	4	—	—	8	12
XVII. Pygopodes	7	—	1	6	14
	127	52	31	175	385

's Graveland, April 1893.

NOTE XXX.

OBSERVATIONS SUR QUELQUES ESPÈCES DU GENRE
OXYOPISTHEN ET DESCRIPTION D'ESPÈCES
APPARTENANT AU MÊME GROUPE,

PAR

W. ROELOFS.

Mr. R. Oberthür a bien voulu me communiquer les espèces du groupe des *Oxyopisthen* que renferme sa riche collection; je donne ici le résultat de leur étude et de leur comparaison avec les espèces de la collection de Mr. Neervoort van de Poll, et du Musée civique de Gênes; le conservateur de ce Musée, le Dr. Gestro, ayant bien voulu me communiquer, avec sa bienveillance habituelle ce que son Musée possède de ces insectes.

Oxyopisthen Westermanni Auriv.

Le Musée civique de Gênes, possède un individu unique (♂) de l'*Oxyopisthen Westermanni* Auriv., de forte taille et remarquable par sa grande fraîcheur. Les taches, blanches chez les autres individus que je connais, sont chez lui jaune-d'ocre, surtout celles du prothorax, sur les stries (ou plutôt intervalles des côtes) des élytres se trouve un rang de petits bouquets de poils jaunes, dont il reste à peine un vestige chez les autres individus que j'ai vu, les côtes elles-mêmes sont d'un noir mat et se distinguent fortement de l'épaule et du bord de l'élytre, qui sont d'un noir luisant.

L'individu porte l'indication: Victoria, April, D. Gerst. 1871.

Notes from the Leyden Museum, Vol. XV.

Oxyopisthen funerarium Thoms. var.

Cette belle variété présente un dessin blanc-jaunâtre, dont les lignes sont sensiblement plus larges que chez le type.

La tache à la base des élytres est plus large et plus liée avec celle qui longe la suture et cette dernière à son tour, plus liée avec la branche postérieure, qui est plus large et plus arquée au bout; l'ensemble forme une espèce d'X, plus complet.

Sur le pygidium sont deux taches blanches plus apparentes, que chez les individus du type, chez qui elles font souvent défaut. Les deux individus que j'ai sous les yeux sont plus massifs et plus larges aux épaules, que les individus du type que je connais.

Deux individus (♂ et ♀) dans la collection R. Oberthür, marqués: Franceville (Intérieur du Congo Français), ex Mus. Gambey, 1892.

Oxyopisthen depressum, n. sp.

Oxyopisthen rufofemoratum Auriv. et Roel. nec Thomson.
Long. 16 à 19 mill., rostr. excl.

Voisin de *rufofemoratum* Thoms., noir, luisant, avec les cuisses, sauf leur base et leur extrémité, rouges; des taches argentées, peu constantes, une au dessus des cuisses, postérieures et une autre sur le mésosternum, contre l'épaule de l'élytre. Rostre un peu plus long que le prothorax, légèrement arqué, faiblement élargi, subcaréné et couvert d'une ponctuation, seulement visible avec un fort grossissement vers le bout. Tête avec un point déprimé à la naissance du rostre, entre les yeux, couverte d'une ponctuation fine et peu serrée. Prothorax plus large, plus court et plus arrondi sur les côtés que chez *rufofemoratum*, légèrement arrondi à sa base, déprimé sur le disque, couvert d'une ponctuation grosse, profonde et par place confluyente sur le disque.

Ecusson pareil à celui de *rufofemoratum*. Elytres un

Notes from the Leyden Museum, Vol. XV.

peu plus courtes que chez ce dernier, assez fortement, mais étroitement déprimées sur le disque tout près de la base, plus faiblement un peu en arrière des épaules et offrant une double dépression transversale au milieu près de la suture; elles sont garnies de stries analogues à celles de l'espèce voisine, mais plus profondes. Pygidium plus allongé, plus pointu, avec des points plus gros que chez *rufofemoratum*, parfois avec deux taches blanches allongées. Le prosternum est couvert de gros points; le métasternum presque lisse, l'abdomen finement ponctué.

Cuisses très faiblement dentées, les postérieures sensiblement plus courtes que chez *rufofemoratum*, n'atteignant, tout au plus, que la moitié du pygidium, tandis qu'elles sont bien près d'atteindre son extrémité chez l'autre espèce.

Deux individus dans la collection R. Oberthür, marqués: Gabon; treize dans la collection Neervoort van de Poll, également avec l'indication Gabon.

L'examen des *Oxyopisthen* de la collection R. Oberthür m'a permis de voir les types de *O. rufofemoratum* Thoms. et de *O. linea-alba* Thoms., provenant de la collection Mniszech. Cet examen m'a prouvé que l'espèce considérée par Mr. Aurivillius et moi comme *rufofemoratum* Thoms. n'est pas identique. C'est une espèce non encore décrite, publiée ici sous le nom de *O. depressum*. Le véritable *rufofemoratum* Thoms. est décrit de nouveau par Mr. Aurivillius sous le nom de *convexicollis*.

Platyopisthen albopectore, n. sp.

Long. 13 à 14 mill, rostr. excl. — D'une forme moins large et plus parallèle que *P. suturale* Roel; noir vélouté en dessus, avec une ligne blanche, couvert d'un enduit blanc pour la majeure partie en dessous. Rostre un peu plus court que le prothorax et la tête pris ensemble, presque droit (♂), ou un peu plus long et faiblement arqué (♀), lisse. Tête comme les antennes noire, luisante, à peine ponctuée, avec une impression allongée entre les yeux, qui continue sur la base du rostre.

Notes from the Leyden Museum, Vol. XV.

Prothorax aussi long que large à sa base, faiblement arrondi sur les côtés, graduellement rétréci en avant, couvert d'une ponctuation obsolète sur le disque, presque nulle sur les côtés, la base bisinuée et bordée de blanc; une ligne blanche au milieu part de la base sans atteindre le bord antérieur. Un enduit blanchâtre couvre les côtés du disque, les côtés du prothorax et couvre le prosternum. Ecusson assez grand, cordiforme, blanc.

Elytres isolément arrondies à la base, à peine plus larges aux épaules que le prothorax, environ une fois et deux tiers plus longues que larges, presque parallèles sur leurs côtés, se rétrécissant graduellement et faiblement, en arrière, leur extrémité presque coupé droit; elles ont des stries ponctuées très faibles, qui, à partir de la 7^e strie de la suture, sont encore plus effacées et n'atteignent pas la base. Les élytres ont sur leur fond noir une assez grande tache rouge foncé, peu apparente sur chaque élytre un peu derrière le milieu. L'intervalle entre la suture et la première strie est blanc de l'écusson jusqu'au de la du milieu. Le pygidium est couvert d'un enduit blanchâtre, sa ligne médiane et ses côtés sont un peu élevés.

Le dessous est blanc, sauf le milieu du métasternum et de l'abdomen; le premier, un peu aplatie et finement ponctué chez le mâle, est un peu concave et avec cette partie plus limitée chez la femelle; elle est en outre chez cette dernière garnie d'écailles très courtes, brunes. Cuisses linéaires, les postérieures atteignant le milieu du dernier segment de l'abdomen, elles sont noires, faiblement couvertes de points blancs, jambes noirâtres, avec une rangée de cils très courts sur la tranche intérieure. Le pygidium du ♂ est triangulaire et faiblement déclive, celui de la ♀ plus pointu et un peu relevé à l'extrémité.

Deux individus (♂ et ♀) dans la collection R. Oberthür; le premier avec l'étiquette: ex Mus. Schmidt; le second avec la même indication, celle de: Gabon.

La Haye, Mars 1893.

NOTE XXXI.

DESCRIPTION DU MALE DE L'IPHTHIMORHINUS
AUSTRALASIAE, Roel.

PAR

W. ROELOFS.

Dans la collection R. Oberthür se trouvent deux individus (♂ et ♀), de cette espèce, dont je ne connaissais que la femelle lors de ma description de l'insecte ¹⁾.

Le mâle diffère assez notablement de l'autre sexe, surtout par la construction du rostre, qui est un peu plus long et n'a pas la forme gibbeuse de celui de la ♀, sa grosseur est plus égale de la base à l'extrémité et présente en dessous un double rang de poils bruns, moins raides que chez certaines espèces du genre *Poteriophorus*; les antennes sont un peu plus distantes de la base, la ligne imprimée sur le devant du rostre est plus forte, il est vaguement ponctué sur les côtés. Le prosternum est enflé devant les hanches antérieures, et vaguement ponctué, le métasternum est largement concave ainsi que le premier segment abdominal et une grande partie du deuxième; l'abdomen et le bout du pygidium sont légèrement pubescents. Les cuisses et les jambes, sauf la base des dernières, sont garnis d'une rangée de poils bruns assez longs.

Le pénis a la forme d'une lame courbée partout de largeur égale et dont les bords sont un peu saillants.

L'unique individu ♂ que j'ai sous les yeux est d'une

1) Notes from the Leyden Museum, Vol. XIV, 1892, p. 207 et suivantes.

Notes from the Leyden Museum, Vol. XV.

couleur un peu plus foncée que les femelles que je connais, les taches noires sont plus grandes et le bout des élytres est noir sur une assez grande étendue.

Les individus de la collection Oberthür proviennent de la collection Mniszech, la ♀ porte l'indication: Australie, Endeavour river ¹⁾).

1) Par la tête soulevée du ♂, j'ai pu m'assurer, que les yeux de l'espèce sont assez fortement séparés en-dessous.

La Haye, Mars 1893.

NOTE XXXII.

OBSERVATIONS SUR LES CARACTÈRES
SEXUELS DU GENRE POTERIOPHORUS SCHH.,
ET DESCRIPTION D'UNE ESPÈCE NOUVELLE.

PAR

W. ROELOFS.

Schoenherr, créateur du genre *Poteriophorus*, et les auteurs qui en ont parlé après lui, entre-autres Lacordaire, dans son *Genera des Coléoptères*, VII, p. 290, ont considéré les individus à rostre court, robuste, fortement arqué, et gibbeux à sa base comme des mâles, ceux à rostre plus long, moins robuste et garni de poils ou de tubercules barbus (*vittatus*) en-dessous, comme des femelles. Guidé, par l'examen des deux sexes dans la genre *Iphthimorhinus* mihi, où le mâle possède un rostre de grosseur assez égale dans son parcours et muni de poils en dessous, la femelle un rostre gibbeux et sans poils, j'avais invité mon collègue Mr. van de Poll d'examiner anatomiquement le *P. niveus* Klug, de sa collection; or, son examen a démontré que les auteurs se sont trompés dans l'attribution des sexes. J'ai partagé cette erreur dans mes descriptions de *P. van de Polli* et *P. sellatus*¹⁾. Les individus à rostre pourvu de poils sont des mâles, ceux à rostre gibbeux des femelles. Dans la collection Baden, actuellement propriété de Mr. Neervoort van de Poll, il se trouve des

1) Notes from the Leyden Museum, Vol. XII, p.p. 238, 239 et 240.

Notes from the Leyden Museum, Vol. XV.

P. niveus, provenant de la collection Sommer, où les sexes sont exactement indiqués.

Poteriophorus andamanensis, n. sp. ♀.

Long. 19 mill. rostr. excl. — Très voisin de *P. niveus* Klug; de la même forme générale et de la même couleur que cette espèce.

Tête et rostre comme chez *niveus*; prothorax un peu plus large et plus court, plus brusquement rétréci en avant que chez ce dernier, avec une dépression longitudinale peu profonde en arrière du disque se perdant en avant dans une faible ligne élevée. La ponctuation consiste en points profonds, irrégulièrement disposés, n'ayant pas l'apparence ocelliforme comme chez *niveus*, elle est peu dense sur le disque, plus serrée, très grosse et profonde sur les côtés. Deux bandes latérales noirâtres se voient à la même place que chez *niveus*. Ecusson comme chez lui.

Elytres un peu plus larges et plus courtes, transversalement déprimées derrière la base; les stries des élytres et leurs intervalles sont plus sensiblement ponctuées. Prosternum plus court que chez *niveus*, déprimé, mais avec une protubérance contre les hanches antérieures, qui s'avance en pointe entre elles et les sépare légèrement. Métasternum vaguement ponctué au milieu, fortement sur les côtés ainsi que sur le mésosternum; les épisternums meta-thoraciques sont très grossetement ponctués. Les segments de l'abdomen garnis d'une ponctuation assez fine et serrée, celle du dernier segment plus forte. Pygidium avec des points peu serrés. Cuisses avec des points, irrégulièrement distribués; jambes et tarses comme chez *niveus*.

Hab. Iles Andamans.

Unique dans la collection Oberthür, provenant de la collection Mniszech.

La Haye, Mars 1893.

NOTE XXXIII.

ON A NEW SPECIES OF APATETICA (STAPHYLINIDÆ)

BY

G. LEWIS, F.L.S.

Last year Dr. Sharp described a species of *Trygæus* in the "Notes from the Leyden Museum" and made some observations on the probable geographical distribution of the genus, and as I have just obtained another species from Siam, which also requires description, it seems to me appropriate to bring it to notice through the same medium. Although this is the third species only at present described, I believe Mr. Fry has more than one species in a collection which is part of the material lately gathered in the Oriental region by Mr. W. Doherty. When I was in Japan I found *Trygæus princeps* Sh. in April and May by sifting out masses of damp leaves which had accumulated in the forests or been swept together by the caretakers of temple grounds, and sometimes amongst marsh-refuse. But later in the summer single examples were often obtained by beating foliage, and it is perhaps by this latter method that the few specimens brought home by travellers have been taken.

APATETICA Westwood.

(*Trygaeus* Sharp, 1874).

Apatetica siamensis, sp. n.

Niger, nitidus, antennis brunneis; elytris viridi-nigris,

Notes from the Leyden Museum, Vol. XV.

profunde punctato-striatis; pygidio apice bisinuato utrinque angulato, in medio longitudinaliter elevato. — Long. 8 mill.

Black, shining, antennae brownish, sides of the thorax pitchy, elytra greenish black. The head uneven, biangulate before the antennae, being straight anteriorly and oblique at the sides, with a cluster of punctures close to the eye, and a few in the middle of the forehead, eyes rather prominent; antennae rather long and slender, three or four joints pass the thoracic base when they are pressed backwards (that five basal joints are glabrous and the terminal joints pilose seems to be a generic character); the thorax convex in the median area, dilated at the sides, with the marginal rim raised forming anteriorly a lateral canaliculation which widens out and becomes shallow towards the base, lateral rim even and smooth, hind angles well rounded off, punctures on the disc deep and not closely set, but spreading out to the sides they are rather more dense, and become confluent in the lateral channel, the base and a small space behind the middle of the neck are smooth and impunctate; the scutellum, surface smooth, and outline semicircular; the elytra strongly sulcate, each sulcus with a row of evenly set and well-marked punctures, interstices smooth; the pygidium is longitudinally raised in the middle, the apex bisinuous with the lateral angles a little protruding; the tibiae are densely pilose on the inner edge. — This description is drawn from a ♂ example.

This species is much larger than *T. princeps* Sh., the elytra are greenish-black and the antennae relatively longer. In *T. princeps* also the apex of the pygidium is obtusely pointed in both sexes.

Folkestone, 31st March 1893.

NOTE XXXIV.

ON REPTILES FROM NORTH BORNEO,

BY

Dr. Th. W. VAN LIDTH DE JEUDE.

The following list is the catalogue of a collection of reptiles captured by Mr. J. Chr. Prakke in the neighbourhood of the Sandakan-bay (N. Borneo). As Dr. F. Mocquard in his latest papers ¹⁾ on reptiles of Borneo gives a full account of the literature of Bornean herpetology, I think I may content myself with referring to this papers.

*Lacertilia.*1. *Gymnodactylus consobrinus* Ptrs.

One female specimen with regenerated tail. The dark cross-bands and the white interspaces between these are not so regularly arranged as in Peters' figure; moreover they are less numerous, there only being 6 dark bands from the nape to the sacrum.

Two specimens, a male and a female, from Sumatra in our collections, quite agreeing in coloration and pholidosis with the Bornean specimen prove to belong to *Gymnodactylus consobrinus* Ptrs, as the male of this pair has no femoral pores and the prae-analpores in a \wedge without groove between them.

2. *Hemidactylus frenatus* D. et B.

Two specimens.

3. *Draco cornutus* Gthr.

1) Nouvelles Archives du Museum, (3), II, p. 115, 1890. Extrait des Mémoires d. l. Soc. Zoöl. d. France, T.V, p. 190, 1892.

Three specimens.

4. *Draco lineatus* Daud.

One specimen.

5. *Gonyocephalus miotympanum* Gthr.

One specimen.

6. *Gonyocephalus borneensis* Schl.

A specimen broken into pieces, the fragments being perfectly recognizable.

7. *Japalura ornata*, nov. spec.

Body compressed, limbs very long. Fifth toe much longer than first nearly as long as third. An oblique fold in front of the shoulder, the fold of the right side meet that of the left side below the throat thus forming a gular fold. All the scales keeled, the dorsals heterogeneous. Our specimen is a female and shows a series of strongly keeled scales on the nape, indicating the presence of a nuchal crest in the male. Farther on the back this series is not so conspicuous. Snout nearly as long as the diameter of the orbit, with a rounded canthus rostralis. A small, conical rostral appendage, which in our specimen is not erected but lying backwards, on the upper part of the head; this rostral appendage measuring 2,5 m.m., with small imbricate scales. Upper and lower labials seven.

As our specimen is not in a very well preserved state I cannot well describe the coloration. The ground colour is a brownish red with small light coloured spots below the eyes. It measures 5,7 cm. from the tip of the snout till the anal opening, and had in its oviducts two ripe eggs, one on each side. These eggs of an oval form are very large in proportion to the dimensions of the animal itself, being 1,5 cm. by 0,7 cm.

I have long hesitated in which genus I had this lizard to class, seeing that it has points of resemblance in common with *Otocryptis* and *Aphaniotis* as well as with *Ceratophora* and *Japalura* and at length fixed on the last mentioned genus lead by the unmistakable presence of an oblique fold in front of the shoulder.

Notes from the Leyden Museum, Vol. XV.

8. *Calotes cristatellus* Kuhl.

Five specimens.

9. *Mabuia multifasciata* Kuhl.

One specimen.

10. *Lygosoma smaragdinum* Less.

A very young specimen.

11. *Lygosoma olivaceum* Gray.

A young specimen.

12. *Lygosoma vittatum* Edeling.

One adult specimen. Three specimens collected in 1845 by Dr. Schwaner were then recognised as belonging to a new species and preserved in our collection under the name of *Scincus Schwaneri*. The description of this *Sc. Schwaneri* was however, as far as I know of, never given.

*Ophidia.*13. *Python reticulatus* Schneid.

Two half-grown specimens.

14. *Calamaria Prakkei*, nov. spec.

Scales in 13 rows. Five upper labials, the third and fourth entering the orbit. The first pair of lower labials not forming a suture behind the mental shield. No azygos shield between the chin-shields. One post- and one praeocular. Ventrals 144—126, an undivided anal-shield, subcaudals $\frac{30-25}{2}$.

As to the pholidosis of the head, this species very much resembles *Calamaria lumbricoidea* as well as *C. Grabowskyi* and *C. Temminckii*, but differs widely from these species in the number of the ventral shields, *C. lumbricoidea* having 217—190 ventrals, *C. Grabowskyi* 186 à 185 and *C. Temminckii* with 187 ventral shields.

I give here the number of ventrals and caudals with the measurements of the six specimens:

- a. 127—1— $\frac{30}{2}$, total length 18 cm., length of tail 2 $\frac{3}{4}$ cm.,
 b. 126—1— $\frac{29}{2}$, » » 24 cm., » » » 4 $\frac{1}{4}$ cm.,
 c. 130—1— $\frac{31}{2}$, » » 26 cm., » » » 4 cm.,

Notes from the Leyden Museum, Vol. XV.

- d. $131-1-\frac{30}{2}$, total length 24 cm., length of tail 4 cm.,
 e. $141-1-\frac{25}{2}$, " " 26 cm., " " " $2\frac{3}{4}$ cm.,
 f. $144-1-\frac{27}{2}$, " " $23\frac{1}{2}$ cm., " " " $2\frac{1}{2}$ cm.

Though the six specimens forming this series slightly differ among themselves, they still agree in so many respects, that they must be taken to belong to the same species. The above-mentioned slight points of difference, to which I shall refer when describing the species more fully, throw a peculiar light on the value of such qualities as are often taken for specific differences in the identification of the species.

Rostral as high as broad, clearly visible from above, frontal hexagonal, its length nearly $1\frac{1}{2}$ times as great as its breadth, shorter than the parietalia, its anterior angle obtuse, its posterior angle acute (in specimen *c* the posterior angle also is obtuse, whilst the length of its frontal exceeds its breadth only very little). One praeocular and one postocular. Five upper labials, the third and the fourth entering the eye, the fifth largest, the first smallest (except in specimen *a* where the first upper labial is at least as large as the second one). The mental in contact with the anterior chin-shields. No azygos shield between the 4 chin-shields. Tail short, though not so short as in *C. lumbricoidea*, the tip of the tail obtuse with a conical scale at the end.

Upper parts dark brown with a strongly pronounced glossy bluish shine. A light coloured beaded coloration on both sides along the belly down to the anal shield. This coloration is formed by the presence of a light spot on the scales of the outer row, and of a dark spot on either side in the outer angle of the ventrals.

In specimen *e* this beaded coloration begins immediately behind the head, in the 5 other specimens the scales of the outer row just behind the head are quite white, so that the row of beads is interrupted on that place; in the specimens *a*, *d* and *f* this beaded coloration appears close behind the head on the second row of scales, a light spot

Notes from the Leyden Museum, Vol. XV.

presenting itself on those scales, this coloration extends itself over a length of 20 à 30 scales growing less and less clear in proportion as the scales advance to the tail. It is remarkable that in specimen *f* many scales on the upper part of the body have an accumulation of dark pigment in their centre, this giving rise to an indication of dark longitudinal stripes and so forming an approach to the coloration of *C. Gervaisi*. In the other specimens also, in some parts of the body the presence of a dark centre in some of the scales is more or less prominent. The four anterior upper labials yellowish white, the fifth on its fore and under part yellowish white, behind and above dark brown, the margins between the upper labials are indicated by brown lines. The lower labials yellow, also separated from another by a dark line. Chin-shields yellow, the anterior pair with a dark spot on the anterior part. This coloration of upper and lower labials and chin-shields is in specimen *a* only slightly indicated. In some specimens especially in specimen *f* may be found an indication of a light collar. Ventrals yellow without dark lines between them, and with a little dark spot on each side in the outer angle (in the specimens *e* and *f* on some of the ventrals small dark spots). A dark line running along the middle of the tail, subcaudals yellowish, the hindmost with dark lines on the margins between them, which lines together with the dark line along the middle, give rise to a feather-shaped coloration at the end of the tail. In specimen *a*, which, on account of its inferior size and other points of difference, I take to be a young one, neither the dark line along the middle of the tail nor the dark margins between the hindmost subcaudals are to be seen.

15. *Simotes octolineatus* Schneid.

A half-grown specimen.

16. *Simotes spec?*

A very young specimen.

17. *Composoma melanurum* Schl.

Notes from the Leyden Museum, Vol. XV.

One specimen.

18. *Tropidonotus trianguligerus* Boie.

Three specimens.

19. *Tropidonotus conspicillatus* Gthr.

One specimen with 146 ventrals, a divided anal and 52 pairs of caudals. A brown band behind the eye, bordered above with a yellow band, which runs from the eye to the angle of the mouth, and with a yellow band which runs below the eye from the tip of the snout to the posterior part of the sixth upper labial.

20. *Amphiesma chrysargum* Boie.

Two specimens.

21. *Cerberus rhynchops* Schneid.

Two specimens.

22. *Homalophis Doriae* Ptrs.

One adult female specimen.

23. *Gonyosoma oxycephalum* Boie.

Four specimens.

24. *Leptophis formosus* Boie.

One specimen.

25. *Dendrophis pictus* Gmelin.

Three specimens.

26. *Dendrophis caudolineatus* Gray.

One young specimen.

27. *Dryophis prasinus* Boie.

Six specimens.

28. *Psammodynastes pictus* Gthr.

One adult and one young specimen.

29. *Amblycephalus boa* Boie.

One specimen.

30. *Dipsas dendrophila* Reinwardt.

Two specimens.

31. *Dipsas boops* Gthr.

Two specimens measuring 57 cm. and 85 cm.

In the collections of our Museum a specimen of this snake, measuring 80 cm. and captured in the island of Java by S. Müller is labelled *Dipsas puella*. Prof. Schle-

Notes from the Leyden Museum, Vol. XV.

gel recognized it as being a new species, but to my knowledge never gave a description of it.

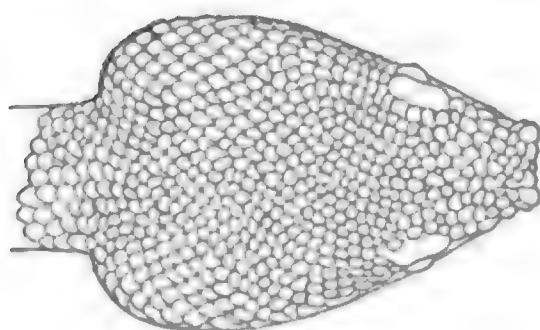
32. *Adeniophis intestinalis* Laur.

One specimen measuring 28,5 cm. and belonging to the variety described by Duméril and Bibron as *Elaps trilineatus*.

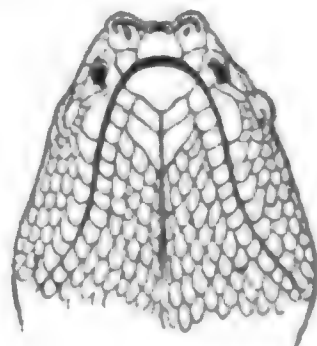
33. *Bothrops sandakanensis*, nov. spec.

Supraciliary shield single, upper labials 11, second undivided forming front part of the facial pit, third largest not reaching the ring of scales under the eye, hinder one smallest. Scales in 21 rows. Dark brown, belly yellow with dark vermiculations. Tail darker than body with three or four lighter spots on the upper part. Rostral with a broad yellow vertical stripe.

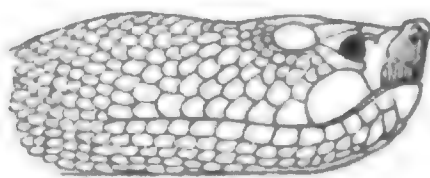
Head of *Bothrops sandakanensis*.



seen from above.



seen from below.



side-view.

Two specimens very closely agreeing with the specimen *b* from Solok, which was described as *Atropophis borneensis* Ptrs. by F. Müller ¹⁾, but differing from that specimen in having a larger supraciliary that entirely covers the eye.

1) Verhandl. d. naturf. Gesellsch. in Basel, 1887, p. 282.

Number of scales $160-1-\frac{53}{2}$ and $155-1-\frac{46}{2}$.

In all points, except in the form of the supraciliary and the dimensions of the second and the third upper labial, this species agrees so much with *Atropos puniceus* and *Atropophis borneensis* that it is unadvisable to class them under 2 different genera; and I think that as Wagler's genus *Atropos* ($=$ *Atropophis* Ptrs.) is principally founded upon the presence of an arched series of supraciliary scales, failing in this new Bornean species, that genus cannot be maintained.

Batrachia.

34. *Rana macrodon* Kuhl.

Two specimens.

35. *Rana tigrina* Daud.

One specimen.

36. *Rhacophorus pardalis* Gthr.

Two specimens.

Leyden Museum, April 1893.

NOTE XXXV.

ON TWO NEW SPECIES OF THE GENUS GERYGONE,

BY

J. BÜTTIKOFER.

Amongst the specimens of the genus *Gerygone*, under which I comprise the genus *Pseudogerygone*, the Leyden Museum contains two apparently new species, one represented by a single specimen from Little Key, the other by two specimens from Aru. All three are collected by von Rosenberg.

1. *Gerygone keyensis*.

General color above olive-brown, with a shade of fulvous on back, rump and upper tail-coverts; quills dark brown, edged with olive-green, the innermost and the wing-coverts with the color of the back, tail fulvous with a broad subterminal black cross-bar, lores brown with a narrow whitish spot above them, ear-covert fulvous; under surface white with a tinge of yellow, the feathers being black at the base, white in the middle and yellow at the tip. This color of the under surface might indicate an immature stage of the bird, as there is a brown tinge coming up on breast and flanks, and Salvadori mentions a young *G. brunneipectus* with yellowish white under surface. Under wing-coverts dirty whitish, edge of wing yellow, thighs fulvous. Bill brown, feet dark gray. Wing 5,4 cM.; tail 3,7; tarsus 1,9; culmen 1,2.

Notes from the Leyden Museum, Vol. XV.

This bird might pass for a young stage of *G. brunneipectus* (Sharpe), but when comparing it with our numerous specimens of this species, I found the bill of the new bird longer and much narrower, rendering the bird sufficiently distinct from its allies, even if it afterwards might turn out to be a young stage and that the adult might resemble *G. brunneipectus* from Aru.

A single specimen, collected by von Rosenberg (N°. 1346 of his original list) on Little Key Island.

2. *Gerygone aruensis*.

This species is closely allied with *G. chrysogaster* Gray, from which it is easily distinguished by its smaller bill, the purer ashy gray head, the much paler, more yellowish (not olive-green) upper surface and its shorter wing and tail. Top and sides of head and hind neck pale ashy gray, rest of upper surface, including the broad outer edgings of quills and upper wing-coverts yellowish green without any tinge of olive-brown, tail-feathers brown, on the outer web narrowly fringed with the color of the back, and provided with a black subterminal bar; lores and ear-coverts slightly tinged with brown; chin, cheeks, throat, centre of chest, breast, abdomen and under tail-coverts white; sides of breast, flanks and under wing-coverts yellow, thighs brownish gray; inner edge of quills from underneath whitish ash-color; bill and feet black.

The following are the comparative measurements of the two allied species:

G. chrysogaster: wing 5—5,5 cm; tail 3,8—4,3; tarsus 1,6; culmen 1,2.

G. aruensis: wing 4,7 cm.; tail 3,0; tarsus 1,4; culmen 1,0.

Two males collected by von Rosenberg (Nos 662 and 816 of his original list) on the Aru Islands.

Leyden Museum, April 1893.

NOTE XXXVI.

ON TWO NEW SPECIES OF BIRDS FROM JAVA
AND CELEBES,

BY

J. BÜTTIKOFER.

Amongst a number of very valuable birds from the East-Indian Archipelago, lately presented to the Leyden Museum by Dr. A. G. Vorderman, I found a specimen which proofs to belong to a new species of *Cryptolopha* and which I propose to name after its discoverer, the meritorious ornithologist of the Malay Archipelago:

Cryptolopha Vordermani.

Very closely allied to *C. Schwaneri* (Blyth) from Borneo, but differing from the latter in having only the anterior half of the crown olive-gray instead of the whole crown.

Above lively yellowish green, somewhat yellower on rump and upper tail-coverts, hind neck, nape and posterior half of the crown like the back, in contrast with the anterior half, which is gray; quills and wing-coverts earthy brown, the latter and the secondaries edged with the color of the back; tail brown, the outer webs edged with olive-green, especially on the basal half, the inner webs edged with fawn, sides of face and ear-coverts gray like the fore-head, lores black, a white superciliary streak, running from the nostrils above the eye, rather more developed than in *C. Schwaneri*, chin and throat pure white, rest of under surface bright yel-

Notes from the Leyden Museum, Vol. XV.

low, centre of abdomen and under wing-coverts whitish, inner edge of quills fawn-color, thighs brown. Bill black, base of lower mandible whitish, feet pale flesh-color.

In size this species does not differ from *C. Schwaneri*. Wing 5,1 cm.; tail 4; tarsus 1,8; culmen 1,1.

Hab. East Java.

A second specimen, also from Java, making part of the collection of the Leyden Museum since about fifty years, must be referred to this species. The more olive tinge of the upper surface is probably due to the influence of light.

Turdinus castaneus.

Adult female: whole upper surface, including wing-coverts, outer web of quills and the tail chestnut-brown, forehead and crown considerably much darker, a white superciliary streak running from the nostrils above the eye; lores brown, ear-coverts gray with white shaft-streaks; sides of face, chin and throat whitish, the feathers edged and tipped with ashy gray, which color becomes predominant on the chest, especially on the sides of the latter, centre of breast and abdomen white; flanks, vent, under tail-coverts, under wing-coverts and thighs somewhat paler brown than the back. Bill black, feet pale brown.

This species differs from *T. celebensis* by its much smaller size and dark chestnut upper surface.

Wing 5,6 cm.; tail 5,2; tarsus 2,2.

The single specimen is collected by Mr. von Rosenberg (N^o 513 of his original list) in the Minahassa, North Celebes, on the 9th of September 1874.

Leyden Museum, April 1893.

NOTE XXXVII.

ON SOME MAMMALS FROM CAHAMA,

BY

Dr. F. A. JENTINK.

April 1893.

(Plates 4, 5 and 6).

The other day we received some Mammals and Birds from Cahama, collected by Mr. C. E. v. d. Kellen, a brother of Mr. P. J. v. d. Kellen, the well known zoologist of the Veth-expedition on the Cunene-river (see N. L. M. 1887, p. 171). Cahama is a locality on the Kakulovar-river, a nothern branch of the Cunene. Although very small in number, there are among the Mammals some which bear a peculiar interest in view of geographical distribution.

Cercopithecus cynosurus Scopoli.

Schlegel said in 1876 (Catalogue, Simiae, p. 73): »On ignore la patrie du *C. cynosurus*; mais tout porte à croire qu'il habite la Sénégambie, d'où on en apporte au dire des marchands, des individus vivants en Europe. Quoiqu'il en soit nous ne croyons pas qu'il ait jamais été observé à l'état sauvage."

De Rochebrune remarks (Faune de la Sénégambie, p. 80): »*Cynocephalus cynosurus* peu commun. Vit par petites troupes; provient de Bafoulabé, Medine, Brakel. Les Peuls, à l'approche de la traite, en apportent quelquefois de jeunes; l'espèce remonte donc plus haut vers l'Ouest, dans les forêts du Fouta."

As Mr. de Rochebrune's statements are not always to

Notes from the Leyden Museum, Vol. XV.

trust (see f. i. Reuvens' *die Myoxidae oder Schläfer*, 1890, p. 35), I do not set much value upon his observations concerning our monkey and I think it wise to accept them only under protest. So that we are as far as in 1876 and know nothing about the locality where *C. cynosurus* is living. It therefore is of great scientific value to know that v. d. Kellen collected (August 23, 1891) a nearly adult male-specimen, agreeing exactly with the other individuals of this very characteristic species in our collection. Senegambia may be the habitat too of it or not, we have here the *proof* that it inhabits South-West-Africa¹. The skull of this specimen is figured on plate 4.

Iris lightbrown (v. d. Kellen MS.).

Vulpes mesomelas Schreber.

One specimen.

According to Mivart's Monograph of the *Canidae*, 1890, p. 47, the habitat of this very strongly marked black-backed Jackal is Southern Africa and Abyssinia. A figure of the skull of v. d. Kellen's adult specimen on plate 5.

Genetta felina Thunberg.

An adult female-specimen, March 20, 1891. Iris brown (v. d. Kellen MS.).

Skull of this specimen on plate 6.

Ratelus leuconotus Sclater.

A single apparently adult specimen, without skull.

The type of this very rare species has been described and figured by Sclater (P. Z. S. L. 1867, p. 98, pl. 8): it had been obtained by the Zoological Society on 3rd August 1866 from a dealer in Liverpool, who stated that he had received it by the West-African Mail. It therefore

1) In the Catalogue of the bones of Mammalia in the collection of the British Museum, 1862, p. 11, there are enumerated two skulls (*a* and *b*) as belonging to *C. cynosurus* from India. This cannot be correct.

probably came from the coast of West-Africa, but the exact locality was unknown.

I am not aware if Mr. de Rochebrune has brought over to Paris a specimen of this species, which he states (l. c. p. 144) to have had living in his possession and which is according to him living in Senegambia as well as *Mellivora ratel* Gray (*Ratelus capensis* Schreber).

The named author remarks: »le *M. ratel*, de même que le *M. leuconota*, est très recherché par les Nègres des contrées où se rencontrent ces animaux; leurs organes génitaux coupés et desséchés, connus sous le nom de *Getala*, sont suspendus aux colliers en graines d'*Abelmoschus* portés, le plus ordinairement, par les jeunes Pouls; des lambeaux de peau sont aussi attachés aux colliers des Bambaras et des Ouoloves. Le *M. leuconota* se rencontre dans les mêmes régions que le *M. ratel*, Gandiole, tout le Cayor et le Oualo; environs de Sorres, île de Thionk, Dakar-Bango, etc.; remonte dans la région du haute fleuve; Podor, Dagana, Saldé; tout le Felou et une partie du Fouta-Djalou. Le *M. leuconota* se distingue (du *M. ratel*) par une taille plus petite, et toute la partie supérieure du corps et de la tête, qui sont d'un blanc pur. Nous avons possédé longtemps en captivité un individu de cette espèce; pendant le jour, il restait enroulé au fond de sa cage; aussitôt la nuit venue, il se livrait à des mouvements désordonnés, en poussant des grognements assez forts; d'une voracité extrême; il consommait des quantités relativement considérables de viande, cachant sous le sable les morceaux qu'il ne pouvait plus avaler; il avait soin de déposer ses excréments dans un coin de sa cage, toujours de même, et de les recouvrir, en grattant le sable avec les pattes de devant, de la même façon que les chats".

It is a pity that neither Sclater nor de Rochebrune gave more details concerning the length of the animal, its skull a. s. o., so that, as our specimen is without a skull, I merely *suppose* that it will be an adult one, because the legs are in harmony with the rest of the body, but

Notes from the Leyden Museum, Vol. XV.

I cannot be *sure* of it. Here follow some measurements taken from the *flat* skin:

length of head and body . . .	48	Cm.
» » tail with tuft	12	»
» » » without tuft . .	9.5	»
» » forefoot with claws .	14	»
» » hindfoot » » . .	8	»

Aulacodus swinderianus Temminck.

A young specimen.

Sciurus conigicus Kuhl.

Four skins of adult specimens.

Phacochoerus aethiopicus Pallas.

Two skulls.

Grimmia mergens Blainville.

One adult skull.

Pediotragus tragulus Forster.

Two skulls of male and female specimens.

NOTE XXXVIII.

NOTES ON THE RAILS OF THE LEYDEN MUSEUM,

BY

R. BOWDLER SHARPE, LL. D.

May 1893.

During my visit to Leyden in April of the present year, I had the pleasure of examining carefully the collection of *Rallidae* as it had been arranged by the late Professor Schlegel in the year 1865 (cf. Cat. Mus. Pays-Bas, Vol. V, pp. 1—79). The following notes, which form a small commentary on Schlegel's Catalogue, may be of some use to future workers on the *Rallidae*.

Rallus longirostris.

Rallus longirostris Bodd.: Sharpe, Cat. B. Brit. Mus. XXIII, p. 10.

On p. 12 of Schlegel's 'Catalogue' four specimens are enumerated under the above name. The true *R. longirostris* is from Guiana, and the only specimen is n^o. 3, an adult bird from Cayenne. N^o. 1 from New Jersey is *Rallus crepitans*, Gm. N^o. 4 from »Brazil'' is *Rallus elegans*, Aud. and the locality is certainly erroneous.

N^o. 2 an adult female bird from Surinam is a very curious and interesting specimen, and appears to be *Rallus caribseus* of Ridgway (Cf. Cat. B. XXIII, p. 13). It differs from true *Rallus longirostris* in being nearly uniform above, in having very light ashy flanks with narrow white bars, and in being ashy on the breast and neck instead of light tawny-colour. From true *R. crepitans* it does not differ so much, but is more uniform above and has lighter flanks,

Notes from the Leyden Museum, Vol. XV.

but the colour of the breast is about the same. The lateral under tail-coverts are almost entirely white, with very large terminal spots of brown, the median under tail-coverts being barred with white and brown.

These are the notes which I made without having a series of specimens for comparison, but whichever the race here described may turn out to be, it is certainly an extension of range to the southward of one of the West Indian forms.

Limnopardalus sanguinolentus.

Limnopardalus sanguinolentus (Swains.): Sharpe, Cat. B. Brit. Mus. XXIII, p. 30.

A young bird from Santiago differs from the adult in being browner, with a shorter bill, and having whitish cheeks and throat. The under surface is ashy grey, overshadowed with brown; under tail-coverts isabelline brown with black centres.

Limnopardalus nigricans.

Limnopardalus nigricans (V.); Sharpe, t. c. p. 31.

The range of this species extends from Southern Brazil to Peru and north to Colombia. I find a specimen in the Museum from Surinam.

Hypotaenidia striata.

Hypotaenidia striata (L.): Sharpe, t. c. p. 33.

In my remarks upon *Rallus jouaji*, Stejneger, I have endeavoured to show that the characters put forward by Dr. Stejneger were not sufficiently born out by our series in the British Museum. I have, therefore, carefully examined the series in the Leyden Museum, and find my conclusions confirmed.

Specimens "with white bars and white spots on the primary-coverts well developed" are in the collection from Java, Sumatra, Cochin China and China and specimens with few spots "are from Java, Sumatra, and Luçon."

A specimen "with no spot" is in this collection from Java.

Notes from the Leyden Museum, Vol. XV.

Hypotaenidia celebensis.

Hypotaenidia celebensis (Q. et G.): Sharpe, t. c. p. 45.

The Leyden Museum contains a large series of this species, almost exclusively from Northern Celebes, viz. from Minahassa, Gorontalo and Pagueat. Several of these are young birds and they invariably show a great deal of white on the throat, but some of the old individuals have the throat almost entirely black. In nearly every specimen the wing-coverts bare a faint indication of reddish bars, and in the young birds the wing-coverts are plentifully, though obscurely, barred with black and rufous, and the quills and tail-feathers are very distinctly banded with rufous. Young birds are all much more plentifully, though obscurely, barred with black and rufous, and the quills and tail-feathers are very distinctly banded with rufous. Young birds are all much more plentifully barred underneath than the old ones, and the flanks and under tail-coverts are also banded with rusty.

Hypotaenidia Jentinki, sp. n.

This is an interesting form of Rail of the group of *H. celebensis* and *H. saturata*. Like the latter bird it has an intensely black throat, but it is easily distinguished by its rufous, instead of olive, brown colour on the back and wings. This rufous colour also separates the species from *H. celebensis* and in addition it has the centre of the head blackish brown, and the lores, ear-coverts and sides of crown, jet black. Total length 11.0 inches, culmen 1.7, wing 6.1, tail 2.3, tarsus 2.15, middle toe and claw 2.15.

Hab. Island of Sula Mangola.

Ocydromus australis.

N^o 1 is of the *O. Earli* group — marked by Finsch '*Ocydromus nova* sp.,' much lighter grey than *O. Earli*, and much paler above, but it has none of the colour of *O. australis*.

Notes from the Leyden Museum, Vol. XV.

Rallina fasciata, Schl. Mus. Pays-Bas, Ralli, p. 19.

Spec. 5. "dans la livrée de passage, variété à remiges sans bandes blanches" is really *Limnobaenus Paykulli*.

Crex dimidiata, Schl. Cat. Ralli, p. 27.

N° 6 is the female of *Corethrura elegans*.

Porzana intermedia.

Porzana intermedia (Herm.): Sharpe, t. c. p. 103.

Further examination and a larger series of specimens will be necessary before the exact eastern range of Baillon's crane can be determined. In the Leyden Museum there is an undoubted specimen of the true *P. intermedia* from Lake Baikal, where *P. pusilla* might have been expected.

Porzana tabuensis.

Porzana tabuensis (Gm.): Sharpe, Cat. B. XXIII, p. 111.

This species varies greatly in dimensions, but I cannot see any constant characters by which any races could be distinguished. Nos. 1 and 2 of Schlegel's Catalogue (p. 36) have the wing 3.4 inches, and the tarsus 1.0—1.15. N° 3 from West Australia has the wing 3.5 and the tarsus 1.2, while specimens from Viti Levu and the Philippines (N° 4) have the wing 3.0 and the tarsus 0.95—1.0.

Pennula sandwichensis.

The typical specimen of this bird in the Leyden Museum has shown me, that I was in error, in uniting it to *P. ecaudata*. It has a streaked upper surface, very different from the uniform back of *P. ecaudata*.

Corethrura pulchra.

Corethrura pulchra (J. E. Gray); Sharpe, t. c. p. 116.

A young bird in changing plumage is very interesting. It has the rufous head and chest of the adult, but the centre of the fore-neck and the rest of the under surface are light brown, with a few freshly moulted white-spotted feathers interspersed.

Notes from the Leyden Museum, Vol. XV.

Creciscus jamaicensis.

Creciscus jamaicensis (Gm.); Sharpe, t. c. p. 135.

A specimen is in the collection from Bogotá.

Limnobaenus marginalis.

Porzana marginalis, Hartl. Orn. W. Afr. p. 241.

Crex suahalensis, Tristr. P. Z. S. 1882, p. 93.

The type of Canon Tristrams bird would appear to be a young one, as the adult female in the Leyden Museum has a grey head and neck, and the lower throat, fore neck and sides of body are also ashy grey slightly mottled with whitish edgings to the feathers; throat and centre of breast pure white; lower flanks, vent, and under tail coverts cinnamon coloured. Wing 4.05: tarsus 1.3.

The young bird in the Leyden Museum is browner above, and brown on the head, the sides of the face light rufous, throat and abdomen whitish, the lower throat, chest, and sides of body very pale rufous with a few white streaks on the flanks, the under tail-coverts and lower flanks very pale tawny.

Porzana Schomburgki, Schl. Cat. Ralli, p. 37.

The specimens attributed to this species by Schlegel are really *Neocrex erythrops* (Sch.), as surmised by Sclater and Salvin (P. Z. S. 1868, p. 457).

Gallinula Franki, Schl. Notes Leyden Mus. I, p. 163 (1879).

I have examined the type of this species in the Museum, and I am not quite convinced that Count Salvadori is right in uniting it to *Amaurornis moluccana*. Its colour is chocolate brown above and below, with the breast and abdomen dark ashy, and the throat dark ashy grey.

CONGRÈS INTERNATIONAL DE ZOOLOGIE

Le Comité permanent vient de se constituer ainsi qu'il suit :

Président: M. MILNE-EDWARDS (Paris).
 Vice-présidents: $\left\{ \begin{array}{l} \text{M. JENTINK (Leide).} \\ \text{M. le comte KAPNIST (Moscou).} \\ \text{M. TH. STUDER (Berne).} \\ \text{M. L. VAILLANT (Paris).} \end{array} \right.$
 Secrétaire général: M. R. BLANCHARD (Paris).
 Secrétaire: M. le baron J. DE GUERNE (Paris).

Le Comité permanent propose la question suivante pour le prix de S. A. I. le Tsarévitch, qui sera décerné en 1895, au Congrès de Leide :

Etude de la faune d'une des grandes régions du globe et relations de cette faune avec les faunes voisines.

Le jury acceptera des travaux portant soit sur un Embranchement, soit sur une Classe du Règne animal.

Les travaux, manuscrits ou imprimés depuis le dernier Congrès, devront être écrits en français et envoyés avant le 1^{er} mai 1895 à M. le Président du Comité permanent, au siège de la Société Zoologique de France, 7, rue des Grands-Augustins, à Paris.

Les mémoires présentés seront soumis à l'examen d'une Commission ainsi constituée :

MM. MILNE-EDWARDS (Paris), Président, R. BLANCHARD (Paris), Secrétaire général, A. BOGDANOV (Moscou), JENTINK (Leide), R. B. SHARPE (Londres), TH. STUDER (Berne) et N. ZOGRAF (Moscou).

Prix décerné par la Société Impériale des amis des sciences naturelles de Moscou en mémoire des Congrès internationaux de 1892 et en l'honneur de S. A. I. le Grand-Duc héritier Césarévitch Nicolas Alexandrovitch.

RÈGLEMENT.

ARTICLE 1^{er}. — Le Comité d'organisation des Congrès internationaux d'anthropologie et d'archéologie préhistori-

Notes from the Leyden Museum, Vol. XV.

que, et de zoologie, réunis à Moscou en 1892, remet à la Société Impériale des amis des sciences naturelles la somme de 2000 roubles argent, pour constituer un capital perpétuel en souvenir du Congrès de zoologie et de l'auguste bienveillance qui lui a été accordée par S. A. I. le Grand-Duc héritier Nicolas Alexandrovitch.

ARTICLE 2. — Les intérêts de ce capital seront affectés à la création d'un prix en l'honneur de S. A. I. le Grand-Duc héritier Césarévitch Nicolas Alexandrovitch. Ce prix sera attribué au Congrès de zoologie.

ARTICLE 3. — La quotité du prix est égale au revenu du capital pendant deux ans. Au cas où il s'écoulerait plus de deux années entre deux Congrès consécutifs, les intérêts des années supplémentaires resteront à la disposition de la Société des amis des sciences naturelles de Moscou, qui les consacrera à des prix décernés dans sa séance annuelle du 15 octobre.

ARTICLE 4. — Si le Congrès cesse d'exister, la part qui lui revient d'après les articles ci-dessus sera attribuée à la Société Impériale des amis des sciences naturelles, qui la consacrera également à des prix distribués dans sa séance annuelle.

ARTICLE 5. — Le prix décerné par le Congrès de zoologie est décerné par une Commission spéciale nommée à cet effet par le Conseil permanent de ce Congrès.

ARTICLE 6. — Les prix peuvent consister en médailles ou en sommes d'argent.

ARTICLE 7. — Ils seront décernés en séance solennelle, pendant la session du Congrès.

ARTICLE 8. — Le programme des prix sera élaboré par le Conseil permanent du Congrès.

ARTICLE 9. — Ce Conseil permanent est en outre chargé de centraliser les travaux présentés, de désigner les savants ou les commissions à l'examen desquels ils seront soumis et qui devront déposer un rapport écrit.

Notes from the Leyden Museum, Vol. XV.

ARTICLE 10. — Tout savant est admis au concours, à la condition qu'il n'appartienne pas un pays dans lequel doit avoir lieu la prochaine session du Congrès ¹⁾).

ARTICLE 11. — Le président du Congrès notifie immédiatement au président de la Société Impériale des amis des sciences naturelles le nom de la personne à laquelle le prix a été décerné.

1) Le prochain Congrès aura lieu à Leyde en août 1895; les savants hollandais sont donc exclus du prochain concours.

NOTE XXXIX.

DESCRIPTION OF A NEW GENUS OF CRAKES.

BY

J. BÜTTIKOFER.

The Leyden Museum has possessed for some years in its bird-gallery a specimen of a Rail which was determined by the late Professor Schlegel to be the young of *Rallus maculatus*. The individual in question purchased of Mr. Frank in 1865. During his recent visit to our Museum, my friend Dr. Bowdler Sharpe pointed out that instead of being a Rail, it was a Crane, and belonged to a section of genera which embraced *Crecoptis*, *Castanolimnas* and *Crex*. He very kindly took the specimen to London with him, and compared it for me with all the neighbouring genera, some of which are not represented in our Museum. As it does not agree with any of the known genera, it seems to represent a new genus, which I propose to call.

Stictolimnas gen. nov.

Differt a genere *Castanolimnas* dicto ala minus rotundata, remige secunda et tertia aequalibus; a genere *Crecoptis* dicto rectricibus decompositis et remigibus aliter dispositis. Typus est

Stictolimnas Sharpei n. sp.

Mantle, scapulars, back, rump, upper tail-coverts and tail brownish black, the on mantle and scapulars margined

Notes from the Leyden Museum, Vol. XV.

with olive-brown and provided with one or two pairs of irregular white spots near the lateral edge. These spots are enlarged to rather long, white lateral stripes on each edge of the tail-feathers. Quills and upper wing-coverts somewhat paler than back, the latter with broader and paler olive-brown or rather ochre edgings and tips and very irregularly dotted with white spots similar to those on the scapulars. Quills provided with five, seldom with only four, rather broad white bars on the inner web and with the same number of white, bar-like large spots on the outer, flowing together to a longitudinal white stripe on the outer web of the two or three outermost primaries. Crown and hind-neck brownish gray with dark centres on the feathers, lores and eyelids whitish, cheeks, ear-coverts and sides of neck slaty gray, chin, throat, a streak behind the eye and thighs ashy gray, centre of chest, breast, abdomen and under tail-coverts brownish gray, sides of chest, breast and flanks of the same color as the mantle, each feather broadly margined with olive-brown, those on the sides of chest and breast with one, those on the flanks with two pairs of lateral white spots. Under wing-coverts olive-brown, centre black, richly spotted or barred with white, edge of wing pale fulvous. Bill and feet red. Wing 14 cM., tail 6,5, tarsus 3,8, culmen 2,5. Hab. South America.

Leyden Museum, July 1893.

NOTE XL.

DESCRIPTION OF A NEW SPECIES OF DOLIUM.

BY

M. M. SCHEPMAN.

Dolium pictum, n. sp.

Shell ovate, inflated, rather solid, narrowly umbilicated, with an elevated spire; whorls $5\frac{1}{2}$, convex, with spiral ribs and concentric hairlike striae. There are about 23 ribs on the last whorl; the 3 uppermost of them are narrow, the other ones rather flat and broader, with narrow interstices, in each of which runs an intermediate lira. Nucleus apparently smooth; aperture oblong, its right margin thickened by an internal rib. Interior of aperture pale yellowish-brown with two other ribs (former lips) and grooves corresponding to the external ribs. Columella straight, with a small white callus, partly covering the umbilicus. Externally this shell is brown, variegated with white; moreover numerous brown spots accompanied by white ones, adorn the last half of the ultimate whorl; on the apertural side, the brown and white forms irregular streaks. Nucleus with a brownish band along the suture.

Alt. 56, diam. 43; apert. alt. 44, lat. 21 mill.

Loc. New Holland? (from the cabinet of Mr. Raye).

This species agrees in many respects with the description of *D. Dunkeri* Hanley (Proc. Zool. Soc. Lond. 1859, p. 431), but that shell according to Mr. E. A. Smith, who compared our specimen with the type in the British Museum,

Notes from the Leyden Museum, Vol. XV.

is smaller and more solid, with a thickened callus on the columella and strong lirae within the outer lip; moreover *D. Dunkeri* has only 2 or 3 intermediate lirae in the grooves between the upper ribs. *D. variegatum* Lam. has a less number of ribs, with only a few intermediate lirae, and is of a quite different painting.

Rhoon, near Rotterdam, September 1893.

NOTE XLL

ON A COLLECTION OF BATS FROM THE
WEST-INDIES.

BY

Dr. F. A. JENTINK.

September 1893.

The collection of Bats hereafter described has been presented to the Leyden Museum by our well known correspondent Dr. C. G. Young from Berbice, New Amsterdam, British Guyana.

This collection tells us that, although our knowledge about the Bats may have increased during the latest years, much remains to be done before we can pretend to know exactly these most interesting creatures: especially the study of the South-American Bats is very difficult by lack of sufficient material. Therefore every addition may be called welcome.

The specimens contained in this collection have been preserved in alcohol and are all in perfect condition; they are eighty in number and belong to seventeen species, among which several rare and interesting ones and one new species.

Atalapha intermedia Allen.

Two female-specimens.

In comparing our specimens with the specimen described and the head figured by Dobson (Catalogue, 1878, p. 274, pl. XVI, fig. 3) we find an important difference in

Notes from the Leyden Museum, Vol. XV.

the relative measurements and especially in the shape of the lobular projection of the outer margin of the ear. From Allen's Monograph of the Bats of North America, 1864, p. 25, however we learn that the very dimensions are rather varying — length of tail from 2 till 2.7, length of forearm from 1.9 till 2.2 inches a. s. o. — meanwhile Allen's figures 21 and 22 represent the *rounded* form of the named lobular projection much better than Dobson's figure of the same part. So I do not hesitate to bring our specimens under this head. Length of the forearm 2.05 and 1.925 inches, 51 and 48 mm.

I observe that the type has been described by Allen in Proc. Acad. Philad. 1862, p. 246, not p. 146 (Allen's Monograph, 1864), nor p. 46 (apud Peters, Monatsb. Akad. Berlin, 1871), nor p. 146 (Dobson's Catalogue, 1878).

Vespertilio nigricans Wied.

Two adult males and one young male, eight adult females and one young female.

The young specimens have the face darker colored than the adult ones. Length of forearm: in the adult males 1.35 inches (33.75 mm.); young male 0.95 inc. (23.75 mm.); adult females 1.4, 1.35, 1.3 inc. (35, 33.75, or 32.5 mm.); young female 1 inch (25 mm.).

Natalus stramineus Gray.

One not adult male.

Very peculiar is the thick long moustache extending the whole length of the upper-lip (Tomes, P. Z. S. L. 1856, p. 178). According to Dobson (Catalogue, p. 343): "the tail is *much longer* than head and body, the extreme tip alone projecting"; Tomes (l. c. p. 177) says: the tail is *equal in length* to the head and body, it consists of seven joints, the terminal one being small". In my specimen the tail ends indistinctly in the membrane, the tip is not projecting and the tail is *shorter* than head and body. Perhaps

Notes from the Leyden Museum, Vol. XV.

these differences are to be partly explained by the fact that our specimen is not adult as its other dimensions show.

	Inches.	Mm.
Length third finger, metacarpal . . .	1,25	31,25
» » » 1 st phalanx . . .	0,25	6,25
» » » 2 nd » . . .	0,75	18,75
» fourth » metacarpal . . .	1,15	28,75
» » » 1 st phalanx . . .	0,3	7,5
» » » 2 nd » . . .	0,4	10,—
» fifth » metacarpal . . .	1,1	27,50
» » » 1 st phalanx . . .	0,4	10,—
» » » 2 nd » . . .	0,2	5,—
» forearm	1,425	35,62

It agrees for the rest with the well know descriptions of the species.

Saccopteryx leptura Schreber.

One adult male.

Length of forearm 1,5 inches (37,5 mm.).

Noctilio leporinus Linnaeus.

Two adult males.

The largest is bright red colored, the other reddish brown. Length of forearm 3,2 inches (80 mm.) and 3,15 inches (78,75 mm.).

Molossus planirostris Peters.

One adult male and two adult females.

This very rare species is well characterized by its small size and by the white color of the chest and abdomen. Male with a gular sac, not developed in the females. Forearm of male 1,4 (35), of females 1,3 inches (32,5 mm.).

Molossus obscurus Geoffroy.

Seven adult males, eight adult females and one young female.

Notes from the Leyden Museum, Vol. XV.

The largest specimen has the forearm 1,6 inches (40 mm.), the young female 1,05 inch. (26,25 mm.).

Molossus abrasus Temminck.

Three adult females.

Vampyrus spectrum Linnaeus.

One adult male.

Phyllostoma hastatum Pallas.

One adult male.

The forearm measures 3,3 inches (82,5 mm.).

Carollia brevicauda Wied.

One adult female.

Rhinophylla pumilio Peters.

Two adult females.

It seems to be an exceedingly rare species, as besides the type (a dried skin) described by Peters, the specimen described by Dobson and the specimens in the Leyden Museum there have no other been recorded, as far as I am aware. Our specimens have the forearm of the size of Peter's specimen, therefore somewhat larger than in Dobson's individual. I add to the excellent description given by the latter author that the white skin covering the armbones and the white claws contrast strikingly with the dark colored wing-membranes and feet.

Glossophaga soricina Pallas.

Six adult male specimens.

Artibeus planirostris Spix.

Twenty-five adult and young males and females.

Artibeus quadrivittatus Peters.

One adult female specimen.

Notes from the Leyden Museum, Vol. XV.

Desmodus rufus Wied.

Three adult females.

Desmodus Youngii, n. sp.

One adult male.

	Inches.	Mm.
Length of forearm	1,95	48,75
» » thumb with claw	0,45	11,25
» » third finger, metacarpal	2,—	50,—
» » » » 1 st phalanx	0,4	10,—
» » » » 2 nd »	1,05	26,25
» » » » 3 rd »	0,8	20,—
» » fourth finger, metacarpal	2,—	50,—
» » » » 1 st phalanx	0,375	9,37
» » » » 2 nd »	0,85	21,25
» » fifth finger, metacarpal	1,85	46,25
» » » » 1 st phalanx	0,375	9,37
» » » » 2 nd »	0,55	13,75
» » tibia	0,95	23,75
» » foot	0,6	15,—

Comparing these measurements with those of the same parts in *Desmodus rufus* it appears that *D. Youngii* is a smaller species, for in the former the forearm measures about 2,5 inches; very remarkable are the greater dimensions of the second and third phalanx of the third finger, being 0,65 and 0,65 in *D. rufus*, 1,05 and 0,8 in *D. Youngii*, the second phalanx of the fourth finger 0,6 in *rufus*, 0,85 in *Youngii*, meanwhile the foot in both species present the same length.

The wings folded and pressed against the body attain the level of the crown of the head in *D. rufus*, in *D. Youngii* however they reach the mentum.

Nose-leaf broader than in *D. rufus*, the notch ¹⁾ in the centre of its upper margin forms an angle of 120 degrees — about 60 in *rufus* — upper part of side-margins slightly

1) Withdrawn in Dobson's Catalogue, pl. XXX, fig. 7.

concave — smooth in *rufus* —, the glandular elevations on the sides much more developed than in *rufus*. Lower lip projecting and grooved like in *rufus*. A not described characteristic present in both species is a well developed fold of the skin connecting the ear to the upper part of the head. Ears still shorter than in *rufus*, a little higher than the crown of the head; the outer margin of the ear terminates in a larger and much more rounded off wart than in *rufus*; tragus less hairy on its front surface and the outer margin not toothed like in *rufus*.

Thumb shorter than the foot; a large cushion at the base of the metacarpal bone, the second cushion so well developed in *rufus*, is absent in *Youngii*. Interfemoral membrane from about the heels: heel without projecting cushion: feet stronger and broader than in *rufus*, for the rest like in that species.

Much lighter colored than *rufus*: the wingmembrane between second and third finger for its greatest part white colored: the wingmembrane between third and fourth finger white colored from about half way the second phalanx downward, a white triangle on the wing-membrane between the second phalanges of the fourth and fifth fingers.

The dentition seems not to differ from that of *rufus*.

I make it me a great pleasure to connect this very interesting new species, the second well established of the genus *Desmodus*, with the name of a man, to whom our Museum is indebted for so many additions to its collections of the British Guyana animals.

NOTE XLII.

REPORT ON THE PODOPHTHALMOUS CRUSTACEA,
COLLECTED IN THE YEAR 1891 BY
DR. H. TEN KATE IN SOME ISLANDS OF
THE MALAY ARCHIPELAGO.

BY

Dr. J. G. DE MAN.

(Plates 7 and 8).

List of Species.

<i>Leptodius crassimanus</i> A. M. Edw. var.	<i>Petrolisthes indicus</i> n. sp.
<i>Thalamita Danae</i> Stimps.	» <i>barbatus</i> Heller.
<i>Goniosoma orientale</i> Dana.	<i>Clibanarius corallinus</i> (M. E.) Dana.
<i>Ocypode Kuhlîi</i> de Haan.	<i>Coenobita rugosus</i> M. E.
» <i>cordimana</i> Latr.	<i>Alpheus Edwardsii</i> Aud.
<i>Varuna literata</i> Fabr.	<i>Caridina typus</i> M. E.
<i>Leiolophus planissimus</i> Herbst.	» <i>timorensis</i> n. sp.
<i>Geograpsus</i> sp.	» <i>Wyckii</i> Hickson, var.
<i>Sesarma Aubryi</i> A. M. E.	<i>Palaemon dispar</i> v. Martens.
» sp.	» <i>lar</i> Fabr.
<i>Remipes denticulatifrons</i> White.	» <i>placidulus</i> de Man.
<i>Petrolisthes inermis</i> Heller.	» <i>lepidactyloides</i> de Man.
» <i>Tenkatei</i> n. sp.	<i>Gonodactylus chiragra</i> Fabr.
	» <i>scyllarus</i> L.

1. *Leptodius crassimanus* A. M. E. var.

Confer: de Man, in: Archiv f. Naturgeschichte, Jahrg.
1853, 1888, p. 287.

Notes from the Leyden Museum, Vol. XV.

A single young male specimen from Poeloe Samaoe.

I have described (l. c.) some specimens of *Leptodius* from the Bay of Batavia under the name of *Lept. crassimanus* A. M. E., most of which presented the peculiar shape of the front characteristic of this species, but some of which more resembled *Lept. exaratus* M. E., as regards the shape of the front. The specimen from Poeloe Samaoe now fully agrees with the last-named specimens, the front presenting the same form as in *Lept. exaratus*. The antero-lateral margins, however, are armed with six teeth, the lobes of the upper surface are rather much prominent and finely granulate near the antero-lateral margins and are moreover somewhat rugose on the anterior half of the upper surface. The cephalothorax and the chelipedes are marked on the same manner with the characteristic orange-coloured spots.

For the rest this specimen perhaps may be referred with the same right to *Lept. sanguineus* M. E.

The cephalothorax is 15 millim. broad and $9\frac{1}{2}$ millim. long.

2. *Thalamita Danae* Stimps.

Confer: de Man, in: Journal of the Linnean Soc. of London, Vol. XXII, 1888, p. 78, Pl. IV, figs. 8 and 9.

One young male specimen from Poeloe Samaoe.

The fourth antero-lateral tooth is considerably smaller than the other teeth, so this specimen must be referred to the variety *Stimpsonii* A. M. Edw. The abdomen does not present the form that I have figured, l. c. fig. 9, but more resembles the figure published by A. Milne Edwards (Archives du Muséum, T. X, Pl. XXXVI, fig. 1^a), the lateral margins of the penultimate joint not bulging out anteriorly and being rather little convex.

The cephalothorax is $20\frac{1}{2}$ millim. broad.

Notes from the Leyden Museum, Vol. XV.

3. *Goniosoma orientale* Dana.

Synon.: *Goniosoma dubium*, Hoffmann, Crustacés de Madagascar, 1874, p. 11, Pl. II, figs. 6, 7, 8.

Confer: de Man, in: Notes from the Leyden Museum, I, 1879, p. 60 and V, 1883, p. 151.

Two male specimens from Endeh, Flores, the cephalothorax of the larger of which is 40 millim. broad.

This species has hitherto only been recorded from the island of Réunion, from the Philippine Islands (Mindanao) and from Timor and doubtless belongs to the rare species of this genus.

4. *Ocypode Kuhlîi* de Haan.

Five specimens from Poeloe Samaoe, that are not yet come to full growth, and three of which are still very young, are likely to be referred to the above-mentioned species.

The identification of young individuals of *Ocypode* is difficult, because the cephalothorax has a different form and because the musical ridge is often still wanting or scarcely distinguishable. In the largest individual, however, a female, the cephalothorax of which is 30 millim. broad, the musical ridge is already developed and composed out of nine or ten small tubercles that have the shape characteristic of this species. The male specimen, the cephalothorax of which is 24 millim. broad, also already shows a trace of these tubercles when seen under a magnifying-glass.

5. *Ocypode cordimana* Latr.

Three young individuals from Poeloe Samaoe.

6. *Varuna literata* Fabr.

One young female specimen from the western part of the island of Soemba.

Notes from the Leyden Museum, Vol. XV.

7. *Leiolophus planissimus* Herbst.

Sixty specimens of different size from Endeſ, Flores, among which about as many female as male individuals.

The lateral margins of the cephalothorax are armed with four teeth, the extraorbital teeth being included. There are no small tubercles on the posterior cardiacal region, that should be found on that of *Leiol. affinis* M. E. from the Sandwich Islands. Seven or eight small sharp teeth are found on the external half of the supraorbital margins and three or four very small acute tubercles are observed on the internal margins of the antennular cavities, i. e. upon the lateral margins of the front. These characters are presented by all the sixty specimens, as well by the males as by the females.

The specimen figured by Herbst, is apparently a female.

8. *Geograpsus* sp.

A very young male from Poeloe Samaoe.

This specimen could not be identified by me with any of the known species, on account of its small size, the cephalothorax being only 9 millim. broad; it belongs probably to *Geogr. Grayi* M. E., as the meropodites of the ambulatory legs of *Geogr. crinipes* Dana from the Pacific Ocean are more enlarged.

9. *Sesarma Aubryi* A. M. E.

Two young specimens (♂, ♀) from the island of Great-Bastaard, near Flores.

	♂	♀
Greatest width of the cephalothorax:	11 millim.	$10\frac{1}{5}$ millim.
Breadth of the upper frontal margin:	$4\frac{1}{5}$ »	$4\frac{3}{4}$ »

In these specimens the front therefore not yet measures half the width of the cephalothorax.

The penultimate joint of the male abdomen is $3\frac{2}{5}$ millim. broad at its posterior margin and $1\frac{2}{5}$ millim. long.

Notes from the Leyden Museum, Vol. XV.

10. *Sesarma* sp.

One young male specimen from the island of Great-Bastaard, near Flores.

It cannot be identified with certainty, but it is closely allied to *Ses. angustifrons* A. M. E. from the Pacific Ocean. This species also presents a great resemblance to *Ses. Weberi* de Man from Flores, but I cannot see a trace of the characteristic transverse ridges that are found on the mobile finger of the anterior legs of the latter form, so that it may not be referred to *Ses. Weberi*.

The cephalothorax is 9 millim. long.

11. *Remipes denticulatifrons* White.

Confer: de Man, Decapoden des Indischen Archipels, in: Max Weber, Zoologische Ergebnisse einer Reise in Niederländisch Ost-Indien, Bd. II, 1892, p. 351.

Four specimens from Endeh, Flores.

The cephalothorax of the two largest is 24 millim. long. In this species the fine interrupted transverse lines on the upper surface of the cephalothorax are very numerous and crowded, for the most part short and all are crenulated in zigzag-lines. The shallow pits bordered with tufts of short hairs, that form a linear series on the lateral margins of the carapace, are numerous and close. The lateral lobes of the front are triangular, spiniform and project beyond the level of the median lobes. The terminal joints finally of the second and third pair of legs are strongly falcate.

12. *Petrolisthes inermis* Heller.

Plate 7, fig. 1.

One single young male specimen, collected together with the following species at Endeh, Flores, ought very likely to be referred to the above-mentioned *Petrolisthes*.

Notes from the Leyden Museum, Vol. XV.

13. *Petrolisthes Tenkatei* n. sp.

Pl. 7, fig. 2.

Eight specimens of different size, viz. seven males and one ova-bearing female were collected at Endeh, Flores, by Dr. ten Kate, whom I have much pleasure to dedicate this new species.

Petrol. Tenkatei belongs to those species the cephalothorax of which is neither armed with a supra-ocular — nor with an epibranchial tooth, and is most closely allied to *Petrol. leptocheles* Heller from the Red Sea, to *Petrol. hastatus* Stimps. and *Petrol. japonicus* de Haan from Japan, and to *Petrol. inermis* Heller that occurs at the Nicobar Islands, at the Mergui Archipelago and on the shores of Java and Flores.

The cephalothorax has nearly the same form as that of *Petrol. inermis* Heller, is still a little broader than long and is distinguished by this character at first sight from *Petrol. elongatus* M. E. and *Petrol. unilobatus* Henderson, the cephalothorax of which is considerably longer than broad. The whole upper surface of the cephalothorax, which is glabrous and shining, is a little punctate on the middle and posteriorly, the little points being somewhat more distant from one another on the mesogastric and on the cardiacal regions than more laterally; as usually transverse elevated lines are observed near the lateral margins and also on the front and as usual a transverse elevated crest is found immediately behind the imaginary line that unites the external angles of the orbits. The little prominent front is triangular, and shows the ordinary mesial furrow, by which the postfrontal crest is interrupted, and on either side of it an oblique lateral one, that separates it from the upper margins of the orbits. The front is rounded at the apex anteriorly, but the lateral margins of it are but very slightly emarginate, so that lateral lobes can hardly be distinguished. The lateral margins of the front, as also the concave upper margins of the orbits,

Notes from the Leyden Museum, Vol. XV.

are entire, not granulate, and the lateral margins of the cephalothorax are slightly cristate. The under surface is also smooth and shining; only a few punctations are found on the smooth and shining abdomen, the middle joints of which are a little hairy.

The anterior legs are elongate and slender, like those of *Petrol. leptochelis* and *japonicus*. They are somewhat unequal, the right being mostly the larger. The anterior margins of the meropodites are provided with a blunt tooth, that is again finely denticulate; the exterior margins of these joints by which they articulate with the carpopodites, are armed inferiorly with a small acute tooth, both in the male and in the female. In the adult males the carpopodites are still a little longer than the cephalothorax, but in younger specimens they are shorter than it. The carpopodites of the adult male, both of the right and of the left chelipede, are somewhat more than three times as long as broad, but in younger individuals they are comparatively less slender. The carpopodites of the anterior legs of *Petrol. rufescens* Heller, a species that occurs in the Red Sea and according to Hilgendorf also on the shores of Moçambique, are considerably broader and not yet twice as long as broad. The anterior margins of these joints are provided with three or four long, but rather low and little prominent teeth; in young specimens (Fig. 2b) the first of these teeth is often sharp, but in older individuals they are rather obtuse prominences and on the carpopodite of the larger or right chelipede of the largest male specimen (Fig. 2), the third tooth is so little developed, that I only observe two teeth, but the left carpopodite presents again four little prominent teeth. The posterior margin is armed, as in *Petrol. inermis* Heller and in *hastatus* Stimps., with a single sharp tooth at the distal end, which is not preceded by smaller ones. The hands are also elongate and slender; the larger is three times as long as measures its greatest

Notes from the Leyden Museum, Vol. XV.

width, whereas the smaller hand is still narrower. The rather little convex upper surface of the hands bears no longitudinal elevated ridge. The outer border of the palm that is entire and not dentate, is nearly straight, but the outer border of the immobile finger is curved inward, somewhat more than that of the larger than that of the smaller hand and the entire inner border of the palm is also straight. The fingers of the larger hand of the adult male measure a third of its whole length, but those of the smaller chela are but little shorter than the palm; in younger specimens the fingers are comparatively a little longer. The triangular dactylus of the larger chela is armed at its under surface near the finely granulated inner border, with an oblong smooth tubercle, that is not found on the dactylus of the smaller hand. The fingers of the larger chela are glabrous on their inner borders, but those of the smaller are densely hairy. In one specimen, apparently also a male, the fingers of the larger chela resemble those of the smaller, being longer than in the other specimens, likewise hairy on their inner borders and presenting no oblong tubercle: I consider it to be a variety. For the rest the anterior legs are glabrous. The upper surface of the wrist is marked with fine oblique granulated lines, and appears finely granulated towards the anterior margin; the upper surface of the hands is also finely granulated, the granules being, however, not piliferous, but quite glabrous. The under surface of the hands is also minutely granulated near the inner border.

The ambulatory legs resemble those of *Petrol. inermis* Heller. The meropodites of the first and second pair are armed on their anterior border with a single sharp spinule, the distance of which from the distal end of the border measures a fourth or a fifth of it, but those of the third pair i. e. of the penultimate pair of legs, are quite unarmed. The posterior border of the meropodites of the third pair of ambulatory legs is also entire, not dentate, but that of the meropodites of the

Notes from the Leyden Museum, Vol. XV.

first and second pair is armed near the distal end with a rather large sharp tooth, and often a second smaller tooth is observed between the former and the distal end of the joint. The anterior border of the carpopodites and propodites of the ambulatory legs is entire, nowhere dentate, but the posterior margin of the propodites terminates in a sharp spinule at the distal end. The ambulatory legs are somewhat hairy.

The cephalothorax of the largest specimen, a male, is $8\frac{1}{4}$ millim. long and $8\frac{1}{2}$ millim. broad, and the larger or right chelipede measures 32 millim. The cephalothorax of the ova-bearing female specimen is $5\frac{3}{4}$ millim. long and $6\frac{1}{4}$ millim. broad, and its anterior legs have a length of about 17 millim.

Petrol. leptocheles Heller is a closely allied species. I therefore sent a specimen of *Petrol. Tenkatei* to Mr. C. Koelbel of Vienna, who kindly compared it with the type specimens of Heller's species and wrote me back that he considered the species from Flores to be a different one. In *Petrol. leptocheles* indeed the lateral margins of the front are more profoundly emarginate, so that the lateral lobes are more distinct, the meropodites of all the ambulatory legs have no spinule on their anterior margin, but are quite unarmed, and even the sharp teeth with which the posterior borders of the meropodites of the first and second pair of *Petrol. Tenkatei* are armed, are not found in *Petrol. leptocheles*.

Perhaps our species may once prove to be identical with *Petrol. hastatus* Stimpson, but the lateral margins of the cephalothorax are described as scarcely cristate and the meropodites of the ambulatory legs are probably armed with more spinules as Stimpson says: »merus superne sparsim spinulosus''. I therefore conclude, like also by the different habitat, Japan, that Stimpson's species is another one.

An adult specimen of *Petrol. inermis* Heller, described in my paper on the Crustacea of the Mergui Archipelago,

Notes from the Leyden Museum, Vol. XV.

lies before me. This species may be easily distinguished by the less slender chelipedes. The wrist (Fig. 1) is not so slender: that of the larger leg is 11 millim. long and $4\frac{1}{3}$ millim. broad. Its anterior margin is always armed with three teeth, that are more acute and more prominent than those of *Petrol. Tenkatei*. The chelae (Fig. 1) are broader in proportion to their length, the larger chela is namely 22 millim. long and 9 millim. broad, whereas the larger chela of *Petrol. Tenkatei* is 18 millim. long and 6 millim. broad. The outer border of the chelae is moreover more arcuate and the fingers of both chelipedes are hairy on their inner borders.

The anterior margin finally of the carpopodites of the anterior legs of *Petrol. japonicus* de Haan bears only one or at most two teeth, a second tooth is observed in this species preceding the distal tooth at the posterior margin of these joints and the anterior border of the meropodites of the ambulatory legs is quite unarmed.

14. *Petrolisthes indicus* n. sp.

Plate 7, fig. 3.

One single male was collected at Endeh, Flores.

This handsome species is most closely allied to *Petrol. mossambicus* Hilgendorf (Monatsberichte Kön. Akad. der Wissenschaften zu Berlin, 1878, p. 825, Pl. II, fig. 6), which inhabits the coast of Moçambique, and it represents the latter in the Malay Archipelago.

The cephalothorax is $5\frac{3}{4}$ millim. long and exactly as broad and presents the same form as that of *Petrol. mossambicus*. The front, however, has a different shape. It is much prominent, but it is very narrow and separated by deep lateral emarginations from the internal angles of the orbits that are blunt and obtuse. The lateral margins of the front are somewhat elevated and separated from one another by a deep mesial furrow, that divides itself, as usual, immediately behind

Notes from the Leyden Museum, Vol. XV.

the imaginary line which unites the external orbital angles, in two furrows that border the anterior part of the mesogastric area. The upper margins of the orbits are concave, their external angles straight and the lateral margins of the cephalothorax, which are almost straight and diverge backwards, are distinctly cristate. These lateral margins like also the orbital margins and those of the front, are entire, nowhere dentate, and both a supra-ocular and an epibranchial tooth are wanting. The somewhat convex, glabrous upper surface presents about the same remarkable sculpture as is found in *Petrol. mossambicus*, though not exactly on the same manner. Like as in the Afrika-species, the cervical suture is followed a little more backwards by another one, parallel with the former, and the two epigastrical lobes are tuberculiform, whereas the mesogastric region presents on either side a small tubercle, a few granules being placed before them. No tubercles, however, are observed on the lateral parts of the gastric region. Six symmetrically arranged prominences are found on the cardiacal region, of which the two anterior pairs are separated from one another by a rather broad transverse groove, the two posterior by a very narrow one. Three or four tubercles are observed, on either side, between the two cervical sutures. The posterior cervical suture is bordered by some oblong prominences and many short transverse ridges or elevations are found on the branchial regions, of different size, and which become smaller towards the lateral margins of the cephalothorax and which are so small on the intestinal region, that they may only be recognized there by means of a magnifying-glass.

The median triangular part of the terminal segment of the smooth abdomen is rather long, its posterior margin being not yet twice as broad as measures the length of this part of the telson. The three basal joints of the external antennae are, as in *Petrol. mossambicus*, all equally short.

The left chelipede is wanting. The meropodite of the

other leg bears an obtuse tooth at the anterior margin. The wrist is still a little shorter than the length of the cephalothorax, it is namely 5 millim. long and scarcely 2 millim. broad in the middle and consequently has the same form as in the african species; the rather acute and straight anterior margin presents only one single small obtuse tooth at the proximal end, though it projects a little near the distal end; the posterior margin terminates at the distal end into a rather acute tooth, that is not preceded, however, by a small tubercle. The upper surface of the wrist is marked with a rather deep longitudinal groove, near and parallel with the anterior margin; it is not granulate, but provided with some elevated lines towards the posterior border. The chela resembles the left chela of *Petrol. mossambicus* (Hilgendorf, l. c. fig. 6); it is 10 millim. long and $4\frac{1}{2}$ millim. broad, therefore nearly twice as long as broad. The much flattened palm is slightly obtusely cristate near the straight inner margin and the outer margin is very sharp, a little arcuate and entire. The upper surface is not tubercular, and, like the under surface, almost smooth. The fingers seem to be pubescent on the inner border and a short pubescence seems to have been present also at the under surface of the outer margin of the palm, but the long hairs of *Petrol. mossambicus* are deficient.

The ambulatory legs that are not hairy, have still a little more compressed shape than those of *Petrol. mossambicus*. The anterior margin of the meropodites is sharply carinate, here and there granulate, but not dentate; on the same manner the posterior margin is unarmed, but somewhat granular in the first and second pair. The outer surface of these joints is granulate and rather deeply sulcate almost in the middle, especially that of the meropodites of the second and third pair. The anterior margin of the carpopodites is also carinate and these joints are, like the propodites, somewhat granular; the outer surface finally of the last pair of legs is also granular.

Notes from the Leyden Museum, Vol. XV.

Like as *Petrol. mossambicus*, also *Petrol. indicus* is apparently at first sight distinguished from all the other numerous species of this genus by the sculpture of the cephalothorax and of the ambulatory legs, as also by the form of the carpopodite of the chelipedes; it differs from the species of the shores of Moçambique especially by the different form of the front and by some other characters.

15. *Petrolisthes barbatus* Heller.

Plate 7, fig. 4.

Porcellana barbata, Heller, Crustaceen der Novara-Reise, p. 80, Taf. VI, fig. 8. (1865).

? *Porcellana coccinea* Owen, Crustacea of the voyage of the Blossom, p. 87, Pl. XXVI, figs. 1, 2. — Dana, Unit. States Explor. Exped. Crustacea, p. 423.

Eight fine specimens of different size from Endeh, Flores. As Heller's description of this species is rather incomplete, I sent an adult specimen to Mr. Koelbel, of Vienna, in order to attain accuracy in naming it. Mr. Koelbel kindly compared our specimen with the single type specimen of *Porc. barbata* Heller from the Nicobar Islands in the "K. K. naturhistor. Hofmuseum" and informed me that he was fully convinced that the two species are identical.¹⁾

Petrol. barbatus Heller belongs to the small number of species which are armed besides with an epibranchial tooth, also with a supra-ocular one. This supra-ocu-

1) On this manner, no doubt, a perfect accuracy is attained in the naming of species, when the original description is insufficient. But then it is a pity when the results of these comparisons are not read or neglected by following authors, because the synonymy then again becomes confused. So for instance Dr. Ortmann (die Decapodenkrebse des Strassburger Museums, IV Theil, p. 262 etc.) has apparently not read my description of *Petrol. dentatus* M. E. (Journal Linnean Soc. of London, Vol. XXII, 1888, p. 216), where I have proved, after having sent one of the specimens to Paris, that *Petr. dentatus* M. E. is really armed with an epibranchial tooth, though Milne Edwards makes no mention of this tooth in the "Histoire naturelle des Crustacés".

lar tooth or spine is placed on the upper margin of the orbits in front of the eye-peduncle, is sharp and directed somewhat obliquely inward and forward (Fig. 4a), being separated by a concave emargination from the lateral margin of the front.

Only one single type specimen of *P. barbatus* Heller is still preserved at the Museum of Vienna; it is a female, the left chelipede of which is wanting. A character of importance has neither been described nor figured by Heller. The outer margin of the chelae is namely armed with several, eight to ten, sharp teeth, directed distally, from the articulation of the wrist until the immobile finger. These teeth, as Koelbel informs me, are as distinctly developed and have the same form in the Vienna type specimen as in our species from Flores. The outer margin of the hands is somewhat arcuate. In the Vienna specimen, a fringe of long hairs is found on the outer margin and for a part also on the upper surface of the hand, by which the above-mentioned marginal teeth are entirely concealed. It is perhaps for that reason that Heller says: »die Scheere ist sehr flach mit scharfen Rändern", not describing the teeth. In the specimens from Flores the outer margin of the chelae is also hairy, but these hairs are very short, not longer than the teeth, so that the latter are not concealed by them. Koelbel is disposed to consider the stronger development of hairs on the hand of the Vienna species at most as a secondary sexual difference, because no other real differences are present. Two small sharp teeth are observed, both in the Flores and in the Vienna specimens, also on the inner margin of the palm, near the distal end, at a small distance from one another. The right chela is usually a little larger than the left. The carpopodite is armed at its anterior border with three or four (rarely five) very sharp, distinctly isolated teeth; so in one adult specimen (Fig. 4) the carpopodite of the right larger chelipede bears three, that of the smaller left four teeth, in another specimen the wrists of both

Notes from the Leyden Museum, Vol. XV.

chelipedes are provided with four teeth, though the left chela is a little larger, and in a third example the right leg of which is again the larger one, the right carpopodite presents a very small fifth teeth between the third and the fourth, the left, however, four teeth; in the remaining smaller specimens the carpopodites are armed respectively with four and three teeth.

Heller says: *margine posteriore (carpi) non spinuloso*. This is not quite exact. The posterior margin terminates at the distal end into a bispinose tooth, that is preceded by one or two smaller ones; the latter, however, are placed on the upper surface of the wrist, so that they are not visible on the posterior margin itself. Heller therefore did perhaps not observe them or perhaps they are quite absent in the Vienna specimen, as Koelbel makes no mention of them in his letter. The arm bears a sharp tooth at the extremity of the anterior margin, and the exterior border that articulates with the carpopodite, presents two minute sharp teeth on the upper side and a similar spinule at the under surface. As regards the sculpture of the upper surface of the anterior legs, the Flores species fully agrees with the type specimen of Heller. I may observe concerning the following legs that in the Flores specimens the posterior margin of the meropodites of the fourth or penultimate pair presents only one single small tooth near the distal end, in the Vienna type specimen, however, two small teeth, like as the posterior margin of the second and third pair, a slight difference considered by Koelbel as individual. As well in our specimens of Endeh, as in the type example of Heller, the carpopodites of the second legs i. e. of the first pair of ambulatory legs, are armed at the distal end of their anterior border with a sharp spinule, that has not been described by the author of the 'Crustaceen der Novara-Reise'. The anterior margin of the meropodites of the three pairs of ambulatory legs is armed on its whole length with sharp spinules. As regards the shape of the cephalothorax, and

Notes from the Leyden Museum, Vol. XV.

more especially of the front, and as regards the sculpture of their upper surface, the specimens of Flores fully agree with the type specimen of Vienna.

Our examples show a reddish colour on the upper side, a rather light one, on which the elevated lines and striae are marked with a darker red, and the violet propodites of the ambulatory legs are ornamented with a small white spot near the wrists; the under surface, especially that of the chelipedes, presents a violet hue.

The cephalothorax of the largest specimen is $9\frac{1}{2}$ millim. long and $9\frac{3}{4}$ millim. broad, thus about as broad as long. *Petrol. barbatus* Heller now is represented in the Red Sea by *Petrol. carinipes* Heller (Fig. 5), a species that bears also an epibranchial- and a supraocular tooth and which presents so great a resemblance to the former that it seems desirable to indicate the few differences between the two species. Before me lies the specimen of *Petrol. carinipes* Heller from Djeddah that I have described many years ago, (Notes from the Leyden Museum, Vol. III, 1881, p. 104), a description to which I refer. In the first place the front of *Petrol. carinipes* (Fig. 5a) is comparatively a little broader with more distinct, rounded lateral lobes. Then furthermore the carpopodites of the anterior legs are a little less slender than those of *Petrol. barbatus*. The posterior margin of these joints is armed with four small acute teeth, the distal one of which is double, as in *Petrol. barbatus*, but these teeth extend beyond the middle of the margin and are placed on the margin itself, so that they are more obvious than in the Indian species. In *Petrol. carinipes* the carpopodites of the first pair of ambulatory legs are not armed with the sharp spinule at the anterior margin, which is found in the Indian species, not only in the specimen of Djeddah, but also in the type specimen of Heller, as Koelbel writes. The posterior margin of the meropodites of the fourth or penultimate pair of legs of *Petr. carinipes* is entire, not dentate, and finally, according to Koelbel, the median

Notes from the Leyden Museum, Vol. XV.

part of the telson of *Petrol. carinipes* should be comparatively a little longer and somewhat less distinctly emarginate on the lateral margins.

It appears to me very likely that *Porc. coccinea* Owen is identical with *Porc. barbata*, but I cannot decide this question, because Owen makes no mention of the epibranchial tooth, which is moreover not distinctly recognizable on the figure in the "Voyage of the Blossom." Owen's example was collected in the Paumotu Archipelago. According to Dana, whose specimens were collected at the Sandwich Islands, an epibranchial tooth is present, and then the identity becomes of course more probable.

16. *Clibanarius corallinus* (M. E.) Dana.

Confer: de Man, in: Archiv f. Naturgeschichte, Jahrg. 53, 1888, p. 447.

A young specimen from Poeloe Samaoe.

17. *Coenobita rugosus* M. E.

Five young individuals from Poeloe Samaoe.

18. *Alpheus Edwardsii* Aud.

Two female specimens from Endeh, Flores.

19. *Caridina typus* M. E.

Two specimens were collected together with *Car. timorensis* in the freshwater lake of Nefko, on the island of Timor.

20. *Caridina timorensis* n. sp.

Plate 8, fig. 6.

Thirty five specimens were collected in the freshwater lake of Nefko on the island of Timor, amongst which only one single ova-bearing female.

This species is no doubt, most closely allied to *Car. pareparensis* de Man (Max Weber, Zoolog. Ergebnisse u. s. w.

Notes from the Leyden Museum, Vol. XV

Bd. II, 1892, p. 379, Pl. XXII, fig. 25), but differs by the different form and shape of the rostrum.

Like the above-mentioned species, which inhabits the river near Pare-Pare on Celebes, also *Car. timorensis* belongs to the species of a small size, as it measures only 17 or 18 millim. and brings likewise forth a small number of large eggs, which are 1,2 millim. long and about half as broad.

The rostrum which is short, presents about the same form as in some varieties of *Car. Weberi* de Man (l. c. Taf. XXII, fig. 23f), is horizontal or more or less directed downward and mostly reaches a little beyond the first joint of the antennal peduncle, sometimes to the middle of the second joint, sometimes, however, not farther than to the distal end of the first joint. The upper margin bears 3—5 small teeth, placed usually on the anterior half of the rostrum, more or less distant from the apex, at equal or unequal distances from one another, and none of which are placed on the cephalothorax. In a few specimens the upper margin presented only one or two teeth, they wanted completely in four examples, the upper margin being entire — in one specimen, on the contrary, I observed six teeth. The lower margin is armed anteriorly also with 3—5 contiguous, very small teeth. The antennal spine is distinct. The telson which is slightly tapering towards the distal end and which is a little shorter than the rami of the uropoda, bears four pairs of spinules on its upper surface; the distal end is armed with five pairs of spinules, of which those of the first, at the external angles, are very short and the shortest of all, being as long as the spinules of the upper surface, those of the second pair are four times longer and the longest of all, and the three remaining pairs are a little shorter than the second and nearly all of the same length.

The eye-peduncles are as long as the basal spine of the upper antennae, which is a little shorter than the first joint of the peduncle. The second joint is slightly shorter

Notes from the Leyden Museum, Vol. XV.

than the first, the third a little shorter than the second, the whole peduncle does not reach to the distal end of the scales of the lower antennae and the spinule at the extremity of the first joint is short, measuring a third of the second joint. The outer foot-jaws do not reach to the extremity of the scales, but project almost with their whole terminal joint beyond the peduncle of the lower antennae.

The legs of the first pair reach to the extremity of the peduncle of the inferior antennae and are similar to those of *Car. pareparensis*. The rather deeply excavated carpopodite is short and only once and a half as long as broad and the fingers have the same length as the palm. The slightly longer legs of the second pair almost extend to the extremity of the scales and also agree with those of *Car. pareparensis*, as the wrist is a little longer than the chela, of which the fingers are scarcely longer than the palm. The legs of the third pair project a little beyond the scales, those of the fourth extend a little less forward than the second pair and about as far as the legs of the last pair. The dactylopodites of the last pair, that are a little less slender than those of *Car. pareparensis*, being not yet five times as long as broad, are armed at their inner margin with nearly 45 spinules and measure about a third or nearly a third of the length of the propodites.

21. *Caridina Wyckii* Hickson, var.

Plate 8, fig. 7.

Confer: de Man, in: Max Weber, Zoologische Ergebnisse u. s. w., Bd. II, 1892, p. 386, Taf. XXIV, fig. 29.

A single adult, ova-bearing female was collected together with the preceding species, in the freshwater lake of Nefko, Timor.

The rostrum of this specimen, that is 28 millim. long, is lanceolate, slightly directed downwards, reaches only to the middle of the third joint of the antennal peduncle and shows 31 teeth on the upper margin,

Notes from the Leyden Museum, Vol. XV.

and 14 or 15 on the lower. The two or three proximal teeth are placed on the cephalothorax, and all stand close together, the two last ones excepted, that are more distant from one another, the foremost near the apex; the teeth of the lower margin decrease in size towards the apex. By its shortness and by its shape, the rostrum somewhat agrees with that of the specimens from the river near Mbawa on the island of Flores (de Man, l. c. p. 393). The terminal post-abdominal segment is armed on its upper surface with five spinules on the right side and with four on the left and shows nine spinules at the distal end; those that stand at the external angles, are short, as long as the spinules of the upper surface, those of the second pair are four times as long and the longest of all, the spinules of the third and of the fourth pair are almost of the same length and somewhat shorter than those of the second pair, but finally instead of two spinules in the middle, as usual, in this specimen only one single median spinule is observed, which is a little longer than the spinules of the third and fourth pair, and scarcely shorter than those of the second.

The two pairs of antennae fully agree with those of the typical species. The legs of the first and of the second pair are typical. Those of the third reach a little farther, as they extend with a part of their terminal joints beyond the distal extremity of the scales; the legs finally of the fourth pair and those of the almost equally long fifth extend as far as in the typical species. The dactylopodites of the third and of the fourth pair have the same form as usual (de Man, l. c. fig. 29*cc*), being armed with six or seven spinules on their inner border, but they measure a fifth of the length of their propodites, as in the variety: *gracilipes*. The terminal joints of the fifth pair measure a fourth of their propodites, show 50—60 spinules on their inner margin, but have the same form as in the typical species (l. c. fig. 29*dd*).

22. *Palaemon (Eupalaemon) dispar* v. Martens.

Confer: de Man, in: M. Weber, Zoolog. Ergebnisse u. s. w. Bd. II, 1892, p. 427, Taf. XXVI, fig. 34.

A male from the hill-streamlets of the island of Great-Bastaard, near the north-eastern coast of Flores.

Two ova-bearing females from Maumeri, East-Flores.

The male is 90 millim. long. The rostrum extends as far forward as the antennal peduncle, the upper margin is somewhat convex and slightly directed downwards at the extremity. The upper margin is armed with ten teeth, of which the first is a little more distant from the second than the following, of which the third is placed justly above the anterior margin of the cephalothorax, whereas the foremost tooth, that stands near the apex, is nearly twice as far distant from the ninth, as the ninth from the eighth. The inferior margin is armed with three teeth. The rostrum therefore shows a great resemblance with that of a male specimen from Timor, that has been formerly figured by me (l. c. fig. 34*b*).

The right leg of the second pair is only present, of which the meropodite measures 11 millim., the carpopodite 17 millim., the palm 15 millim. and the fingers $8\frac{1}{2}$ millim. The fingers are armed with some small teeth along the proximal half of their inner edges.

The two females are respectively 75 millim. and 65 millim. long.

The formulae of the teeth of their rostra are $\frac{1}{4}$ and $\frac{1}{2}$; in the former specimen the third tooth stands above the anterior margin of the cephalothorax, in the other immediately behind it and in both specimens the teeth extend along the whole length of the upper margin until near the apex. In each specimen one of the legs of the second pair is deficient; in both, however, the two fingers of the remained leg show several small teeth along their inner edges.

Notes from the Leyden Museum, Vol. XV.

24. *Palaemon* (*Eupalaemon*) *lar* Fabr.

Confer: de Man, in: Notes from the Leyden Museum, T. I, 1879, p. 168 (*ornatus*) and in: Max Weber, Zoologische Ergebnisse u. s. w. Bd. II, 1892, p. 445.

Sixteen specimens from the island of Timor, among which two adult males and five adult ova-bearing females; of these females, however, only one single bears still the two legs of the second pair. The smallest, ova-bearing female is 62 millim. long.

Nine examples from the hill-streamlets of the island of Great-Bastaard, situated near the north-eastern coast of Flores, among which two almost full-grown males and five ova-bearing females.

Eleven young specimens from Roti, near Timor.

Three young individuals from western Soemba.

In all these specimens the distal end of the telson terminates into a sharp, triangular tooth, which in some individuals is more or less rubbed off and in that case of course is less distinct.

25. *Palaemon* (*Macrobrachium*) *placidulus* de Man.

Confer: de Man, in: Max Weber, Zoolog. Ergebnisse etc. Bd. II, 1892, p. 489, Taf. XXVIII, fig. 48.

Five ova-bearing females from Maumeri, East-Flores.

Eleven specimens from the hill-streamlets of the island of Great-Bastaard, near the north-eastern coast of Flores.

One example, destitute of the second pair of legs, from Timor.

As I have formerly indicated, this species seems to be somewhat variable, as regards the length of the fingers of the smaller leg of the second pair in the male, and of the two legs of the second pair in the female. I therefore wish to give a more detailed description of these specimens.

The eleven examples from Great-Bastaard are all ova-

Notes from the Leyden Museum, Vol. XV.

bearing females, with the exception of a single fullgrown male, that bears still the legs of the second pair. This male specimen is 52 millim. long, the rostrum included, and thus a little longer than the largest male in the collection of Max Weber, that had a length of 44 millim. The rostrum reaches to the distal end of the second joint of the antennal peduncle; six of the ten teeth of the upper margin stand on the cephalothorax, and the lower margin shows two teeth. Like as in the mentioned male, that was collected by Prof. Weber on the island of Saleyer, the larger leg of the second pair is found on the right hand and fully agrees with that of the other specimen. The meropodite is 15 millim. long and the carpopodite 17 millim., whereas the latter is 5 millim. broad at the distal end; the chela has a length of 28 millim., the fingers are 12 millim. long. The palm which is 16 millim. long, is $6\frac{1}{4}$ millim. broad and $4\frac{1}{2}$ millim. thick, consequently compressed in the proportion of 3:2. The fingers are a little more slender than those of the male of Saleyer, but are for the rest quite similar. The meropodite of the shorter leg is 10 millim. long, the carpopodite 12 millim., the palm 10 millim. and the fingers 9 millim.: and this leg also agrees with that of the other specimen. The spinulation of these legs is also the same in both individuals.

The ten female specimens of Great-Bastaard are a little smaller than the described male, their length varying between 38 and 42 millim.; they are all nearly of the same size. Only one single female, 38 millim. long, is still provided with both legs of the second pair: the fingers are scarcely or not shorter than the palm; this is also the case with three other examples, which bear still one leg of that pair. One of these specimens shows a singular monstrosity. Only the four first or proximal teeth, that stand on the cephalothorax, are developed, and the rostrum is represented by a strongly arcuate hook, which is sharply acuminate, with the point directed downward,

Notes from the Leyden Museum, Vol. XV,

and that reaches until the distal end of the first joint of the antennal peduncle.

The five specimens, all ova-bearing females, that were collected at Maumeri on the eastern part of Flores, perfectly agree with the female specimen from the river Lella, 48 millim. long, that I have formerly described (l. c. p. 492). This resemblance cannot surprise us, as the river Lella streams in the neighbourhood of Maumeri. These examples are considerably larger than the ten of Great-Bastaard, but this fact is sometimes also observed in other species, as is proved by the above-mentioned female specimens of *Palaemon lar* from Timor, that are all provided with eggs, of which the smallest has a length of 62 millim., the full-grown, however, of 10—13 centim., as also by the fact that the ova-bearing females of that species of Great-Bastaard show a middle length of 8 or 9 centim. The five examples from Maumeri are 55—60 millim. long, thus about as long as the adult male from Great-Bastaard. The upper margin of the rostrum is armed with 11—13 teeth, the sixth or seventh of which is placed above the anterior margin of the cephalothorax, the lower margin is armed in all with two teeth. One specimen, that has a length of 58 millim., is still provided with the left leg of the second pair. The meropodite measures $8\frac{1}{2}$ millim., the carpopodite has the same length and the chela is 17 millim. long, the fingers measuring 9 millim. The carpopodite of $8\frac{1}{2}$ millim. is $3\frac{1}{2}$ millim. thick at the distal end, the palm is 8 millim. long, $4\frac{3}{4}$ millim. broad and $2\frac{2}{3}$ millim. thick. These dimensions show that in this specimen the carpopodite and the meropodite have the same length and that they are only little longer than the palm, which is nearly once and a half broader than the carpopodite and still shorter than the fingers that meet along their inner edges when closed.

In another female, that is 56 millim. long, the two legs of the second pair have nearly the same length and

Notes from the Leyden Museum, Vol. XV.

the same size, and the fingers of both legs are distinctly longer than the palm. In the three other specimens, that have all only one leg, the palm is also shorter than the fingers. It appears to me very probable that in the fullgrown females of this species the fingers are always a little longer than the palm, but that they are shorter than it at a younger age.

The single specimen from Timor must probably be referred to *Pal. placidulus*, but it is a pity that now again, as during the voyage of Prof. Weber, only a single specimen of this species has been collected on that island. The rostrum is armed above with 11 teeth, of which the eighth stands above the anterior margin of the cephalothorax, below with 2 teeth.

26. *Palaemon (Macrobrachium) lepidactyloides* de Man.

Plate 7, fig. 8.

Confer: de Man, in: Max Weber, Zoologische Ergebnisse etc., Bd. II, 1892, p. 497, Taf. XXIX, fig. 51.

A single fine male from the hill-streamlets of the island of Great-Bastaard.

This specimen is interesting, because it completes our knowledge of this rare species. It is considerably larger than the typical specimen, that was collected by Weber, and that had a length of 46 millim. from the apex of the rostrum to the tip of the telson, the example of Great-Bastaard measuring 74 millim. The rostrum agrees with the first specimen, reaches until the distal end of the second joint of the antennal peduncle and is armed above with eleven, below with two teeth: the six first teeth are placed on the cephalothorax, and the rostrum is narrow and directed downwards. The extremity of the telson is hurted and the right rami of the uropoda are deficient; the still present left rami have exactly the same length, the external being not longer than the internal. The

Notes from the Leyden Museum, Vol. XV.

outer foot-jaws project with their terminal joint beyond the peduncle of the lower antennae, but they do not reach until the extremity of the scales. The legs of the first pair project with two third parts of their carpopodites beyond the distal end of the scales. The right leg of the second pair is the larger. The meropodite of this leg, that is $18\frac{1}{2}$ millim. long, projects with its distal half beyond the antennal scales; the carpopodite is 20 millim. long, and 8 millim. thick at the distal end, so that this joint is two and a half times as long as thick, like that of the specimen of Weber. The chela (Fig. 8) or hand is 49 millim. long, and the fingers measure 35 millim. Quite different from the first described individual, the fingers are not as long as the palm, but they are twice as long as it: this difference must, I think, be ascribed to the larger size i. e. to the higher age of this specimen. The palm is 14 millim. broad and 7 millim. thick, consequently as much compressed in the proportion of 2:1 as in the other example. The palm is also comparatively as much broader than the carpopodite as in the specimen that was collected by Prof. Weber, namely nearly twice as broad. The outer and the inner margin of the palm are arcuate, and the inner margin of the chela proceeds like a S. The slender and narrow fingers have an interspace between them when closed, that grows narrower towards their tips; neither the index, nor the dactylus shows the large teeth that were found in the specimen of Weber, but each finger shows on the whole length of its inner edge, a double row of numerous, very small sharp teeth. Between the latter, short fine hairs are observed by means of a magnifying-glass.

As regards the characteristic spinulation of this leg, this example agrees with that of Weber, but the spinules of the upper surface of the palm are somewhat more numerous and more crowded, that may be ascribed to the larger size of this individual.

This leg is consequently longer than the whole animal.

Notes from the Leyden Museum, Vol. XV.

The left leg agrees with that of the first specimen. Here also the meropodite which is 12 millim. long, does not yet reach to the extremity of the antennal scales. The wrist, which is 11 millim. long, is likewise shorter than the meropodite and the chela measures 25 millim. The fingers, that are 16 millim. long, are gaping and clothed with the characteristic hairs. The palm is 9 millim. long, 7 millim. broad and $4\frac{1}{3}$ millim. thick. In this specimen also the fingers are almost twice as long as the palm. Both legs of the second pair show a sea-green colour and are marked with light spots, whereas the fingers present a light-coloured band, placed on the larger chela near their tips, (Fig. 8), on the smaller in the middle of them.

This species now, of course, appears to be still more allied to *Pal. lepidactylus* Hilgendorf of the coast of Moçambique, because in this specimen the fingers of the larger hand are longer than the palm. Nevertheless I regard the two species to be different. The teeth of the rostrum reach almost until the middle of the cephalothorax, but in the african species they extend only along the distal third of it. The characteristic spinulation of the upper and of the lower surface of the palm of the larger hand is a different one and the character presented by the rami of the uropoda is also shown by this second specimen. The fingers, moreover, of the larger hand of *Pal. lepidactylus* are more hairy and the chela itself has a different form.

27. *Gonodactylus scyllarus* L.

Two specimens from Larantoeke, East Flores.

28. *Gonodactylus chiragra* Fabr.

A single specimen from Poeloe Samaoe.

Middelburg, Sept. 1893.

EXPLANATION OF THE PLATES.

Plates 7 and 8

- Fig. 1. *Petrolisthes inermis* Heller. Larger chelipede of a full-grown specimen from the Mergui Archipelago. $\times 2$.
- Fig. 2. *Petrolisthes Tenkatei* de Man, from Endeh, Flores, male, $\times 2$; 2a, front of the same specimen, $\times 5$; 2b the carpopodite of the left, smaller chelipede of another younger specimen, in which the teeth of the anterior margin are more distinct, $\times 4$.
- Fig. 3. *Petrolisthes indicus* de Man, from Endeh, Flores, $\times 3$; 3a front of the same specimen, $\times 6$.
- Fig. 4. *Petrolisthes barbatus* Heller, male specimen from Endeh, Flores, $\times 2$; 4a front of the same individual, $\times 6$.
- Fig. 5. *Petrolisthes carinipes* Heller, specimen from Djeddah, Red Sea, $\times 3$; 5a front of this specimen, $\times 6$.
- Fig. 6. *Caridina timorensis* de Man, Figs. 6a, 6b and 6c lateral view of the rostrum, of the eyes and of the basal part of the antennal peduncle of three individuals; 6d carpopodite and chela of the first pair of legs, 6e the same joints of the second pair, 6f dactylopodite of a leg of the fifth pair, 6g an egg. All the figures are twenty five times magnified, with the exception of fig. 6f which is fifty times.
- Fig. 7. *Caridina Wyckii* Hickson, var. Lateral view of the rostrum of a female specimen from Timor, $\times 6$; 7b distal end of the rostrum of this specimen, $\times 25$.
- Fig. 8. *Palaemon (Macrobrachium) lepidactyloides* de Man, larger chelipede of a male specimen, collected in the hill-streamlets of the island of Great-Bastaard.

NOTE XLIII.

ON A NEW SPECIES OF THE GENUS TESTUDO

BY

Dr. Th. W. VAN LIDTH DE JEUDE.

(Plate 9.)

On arranging the tortoises of the genus *Testudo* in the collections of the Leyden Museum I met with a mounted specimen, collected at the Cape of Good Hope by the late Kuhl and van Hasselt, which though having much in common with *Testudo geometrica* L., yet in other points differs from that species and shows more resemblance with *Testudo elegans* Schoepf. In the absence of the nuchal shield as well as in the peculiar form of its gular shields our specimen differs from the South-African species of the genus *Testudo* allied to *Testudo geometrica* ¹⁾ and must be regarded as to belong to a new species:

Testudo Strauchi nov. spec.

Carapace very convex, the dorsal shields, especially the third one, swollen and subconical, lateral marginals nearly vertical not forming an angle with the costal shields, posterior margin feebly reverted and feebly serrated, shields very strongly striated concentrically. *No nuchal*, supracaudal single feebly incurved, first vertebral as long as broad, the others much broader than long, the third broader than

1) G. A. Boulenger. On the South-African Tortoises allied to *Testudo geometrica*. Proc. Zool. Soc. 1886, p. 540.

the corresponding costal. Plastron large very openly notched in front, deeply notched behind; *gulars very long*, the suture between them being nearly one and a half as long as the suture between the humerals, suture between the humerals as long as that between the femorals, suture between the anals smaller than that between the humerals and nearly twice as long as that between the pectorals. Axillary small, inguinal large. Head moderate with feebly hooked beak, upper head shields small and irregular. No large tubercle on the hinder side of the thigh. Carapace dark brown with yellow radiating rays, shields of plastron brown with an excentrically placed yellow spot from which radiate yellow rays.

Length of shell 14 cm., depth 8,5 cm., length measured over the curve 19,5 cm..

I dedicate this species to the memory of the late Dr. Alexander Strauch, who by his very valuable and highly esteemed papers on Chelonians has so much advanced our knowledge of this interesting group.

LEYDEN MUSEUM, Sept. 1893.

NOTE XLIV.

ON THE HABITS OF THALASSINA ANOMALA HERBST

BY

Dr. R. HORST.

In his interesting note on *Thalassina scorpionoides* ¹⁾ Latr. (Challenger-Reports, Zoology, Vol. XXIV, p. 19, Pls. III, IV) Mr. Spence Bate gives a detailed description of the peculiar branchial organs of this animal, which in the central portion of the branchial chamber, instead of consisting of cylindrical rods, are developed into thin foliaceous plates, bringing the blood over a large surface into contact with the aërating medium within the chamber. From this structure the author believes, that it may be deduced, that the circulation of the water through the branchial chamber cannot be very vigorous and that the animal probably inhabits hollow passages in the mud. It will therefore not be without interest to know, what an eye-witness Prof. K. Martin, who met with these animals during his journey in the Moluccas, writes us about their habits and mode of existence.

1) It seems to me very dubious, whether the specimen, described by Mr. Spence Bate is identical with *Th. anomala* Herbst (— *scorpionoides* Latr.); in this species the second pair of pereopoda more resembles the first of them than the following ones. It has its propodos compressed, nearly as long as broad, with a short, pointed pollex and is furnished with a compressed, arched dactylos. However in the specimen of Kandavu, as described and figured by Mr. Sp. Bate, the second, third and fourth pairs of pereopoda resemble each other; the propodos is subcylindrical, longer than broad and the dactylos is curved in a reverse direction from the common plan.

»Bei Kajeli (Buru) landend, betrat ich zunächst beim Fort eine grasbedeckte, sumpfige Ebene. Ihr Boden ist mit zahlreichen, etwa $\frac{1}{2}$ m. hohen Erdhügeln besetzt, in denen man mehrere Centimeter weite, rundliche Schlupflöcher bemerkt. Sie werden von einem langschwänzigen Krebse aufgeworfen, einem Thiere, welches ich später nur mit grosser Mühe nach zahlreichen vergeblichen Grabversuchen erhielt; es ist im Leben schön gefärbt, licht schieferfarben, mit backsteinrothem Rückenstreifen und schwarzen Borsten an den Gliedmassen.

Bereits auf Seran hatte ich solche Hügel wahrgenommen, und auch dort versicherte man mich, dass sie von Krebsen aufgeworfen seien. Es dürfte wohl kaum zweifelhaft sein, dass diese Hügel von demselben Thiere herrühren. Sie befanden sich in sumpfiger Gegend, am oberen Faun, einem in Mangrove verlaufenden Bache, welcher in der Massimato bei Pasahari, an der Nordküste von Wahaai, mündet. An dem betreffenden Orte waren die Hügel $\frac{1}{2}$ — $\frac{3}{4}$ m. hoch und so dicht aneinandergereiht, dass sie das Gehen sehr erschwerten”.

NOTE XLV.

DESCRIPTIONS OF EARTHWORMS.

BY

Dr. R. HORST.

VII.

On Malayan Earthworms.

(Plate 10).

The earthworms, described in the present paper, are for the greater part collected by Dr. H. ten Kate, during his journey in the Malay Archipelago in 1891, in the isles of Flores, Timor, Samao, Groot-Bastaard and Soemba. I added the description of some other ones from Java, Sumatra and Borneo, for which I am indebted to the kindness of dr. Vorderman, dr. J. F. van Bemmelen, dr. J. G. Boerlage, dr. J. Bosscha en dr. Hagen. As could be expected, a great number of those worms belong to the genus *Perichaeta*. Though the discrimination of the species of this large genus is a very difficult task, I undertook to add seven new species to it, bringing the total number of Malayan *Perichaeta*-species up to thirty-three.

Perichaeta falcata n. sp.

Two specimens, collected by dr. ten Kate at Sikka in East Flores.

A rather thick, stout worm, of a yellowish brown colour. The largest specimen measures about 120 mm. in length. The circles of setae are disposed along a distinct,

Notes from the Leyden Museum, Vol. XV.

whitish ridge. On the clitellum neither intersegmental grooves nor setae are visible. Segments IX—XIII have a great longitudinal diameter, a third longer than that of the foregoing segments.

The rectangular prostomium extends back over the half of the buccal segment.

The spermathecal pores are distinct, semilunar fissures, situated in the inter-segmental grooves VII/VIII and VIII/IX, on each side of the belly.

The oviducal pore is situated upon a white area in segment XIV.

The male pores lie upon a large, transverse, oval papilla, extending forward and backward till segment XVII and and XIX. Dorsal pores are only recognizable behind the clitellum. There are about 60 setae on the segments in front of the clitellum.

The 8th, 9th and 10th septa are absent. The gizzard occupies segments IX and X; the intestinal coeca of segment XXVI are conical, moderately developed. Two pairs of spermathecae in segments VIII and IX; each of them (fig. 1) consists of a broad, oval pouch with a short, wide duct and of a thick, falcate diverticulum, that is nearly as long as the pouch, the diverticulum communicates with the main pouch by a short and narrow, S-like bended duct. The diverticulum of the anterior spermatheca sometimes lies in front of the septum, in segment VII.

The prostate is a highly lobulated gland, opening on the exterior by a muscular duct, as usually bent upon itself and provided with a dilated sac at its extremity.

Though already nine species of *Perichaeta*, furnished with two pairs of spermathecae, have been described from the Malay Archipelago, our specimens could not be identified with one of them.

? *Perichaeta sangirensis* Michaelsen.

One specimen, collected by dr. ten Kate at Sikka in East Flores.

Notes from the Leyden Museum, Vol. XV.

Among the *Perichaeta*-specimens from Flores there is one individual, showing only two spermathecal pores in the intersegmental groove VII/VIII. It is a slender worm, tapering posteriorly, and measuring 140 mm. in length; in the middle region of the body the intestinal canal is visible through the transparent body-wall.

The cephalic lobe is distinct, extending over two thirds of the buccal segment.

The first dorsal pore is visible in the groove between segments XI and XII.

The spermathecae occupy segment VII; they consist (fig. 2) of a long pyriform sac, provided with a short and wide excretory duct; a small, globular diverticulum communicates by a short and narrow tube with the main pouch.

The prostata is divided by a deep fissure in two halves, which consists each of numerous small lobes, separated from each other by shallow grooves. On the segments in front of the clitellum about 40 setae can be counted.

This specimen shows no resemblance to another *Perichaeta*-species from Flores, described by myself in an earlier paper ¹⁾; perhaps it will be identical with *P. sanguirensis* Mich ²⁾.

Perichaeta posthuma Vaillant.

Eight specimens, collected by dr. ten Kate in the island Groot-Bastaard.

Perichaeta sp.

One specimen, collected by dr. ten Kate in the island Groot-Bastaard.

Besides the specimens of *P. posthuma*, dr. ten Kate collected in the island Groot-Bastaard another earthworm, belonging also to the genus *Perichaeta*; unfortunately this

1) Earthworms from the Malay Archipelago; Max Weber, Zoolog. Ergebnisse einer Reise in Niederl. Ost-Indien, Bd. II, 1892, p. 70, pl. III, fig. 28.

2) Jahrbuch Hamburg. Wissensch. Anstalten, VIII, 1891, p. 86.

specimen is badly preserved. It is a rather slender worm, measuring about 90 mm. in length. The buccal region of the oesophagus is everted, therefore the cephalic lobe could not be recognized. The clitellum is distinct, without setae.

The male generative pores are situated upon distinct papillae; there are 10 setae between them. On the segments XIX, XX and XXI a pair of cub-shaped papillae are visible, corresponding to the line of the male pores. External orifices of spermathecae could not be recognized; neither was there internally a trace of these organs to be found. The internal structure is as usually. Perhaps this specimen must be referred to *P. Forbesii* Bedd.¹⁾; however this species also possesses papillae on segment XVIII.

Perichaeta variabilis n. sp.

Eight specimens, collected by dr. ten Kate in the north of the island Soemba.

A rather thick, stout worm, with a cylindrical body of a yellow-brown colour. The length of the largest specimen is about 160 mm. The prostomium extends back till the half of the buccal segment. The clitellum is distinct, showing neither setae nor intersegmental grooves. The setae are arranged in a continuous circle, only interrupted in the median dorsal line; on the segments in front of and behind the clitellum about 54 of them are visible, situated upon a prominent ridge.

There are no copulatory papillae. Two pairs of spermathecal pores are situated laterally, in the intersegmental grooves VII/VIII and VIII/IX; an unpaired oviducal pore on segment XIV.

The male pores on segment XVIII, situated upon distinct papillae, lie in the line of the seventh seta from the ventral median line; eight setae could be counted between both pores. First dorsal pore behind the clitellum.

These worms present a singular variability in the structure

1) Proc. Zool. Society, 1890, p. 65, pl. IV, fig. 5.

of their genital organs. The spermatheca (fig. 3) consists of a large globular pouch and a long diverticulum, showing several windings like a corkscrew; however often this diverticulum is poorly developed, extending scarcely till the half of the pouch and is wound not at all or hardly so (fig. 3a). In four specimens, which I examined, both spermathecae of the dextral side presented such a faintly developed diverticulum; however it was also observed at the left side.

The prostata also shows a divergency from the usual structure; it is a small, faintly lobed gland, of a rudimentary appearance, extending forward and backward not much beyond its muscular duct. I thought first to have to do with a species, which perhaps was allied with the Japanese *Perichaeta* ¹⁾, described by Beddard, which have the prostata entirely wanting; however in one of the four specimens, which I examined, I found at the ventral side a well-developed prostata, extending as usually over three segments. It may be presumed therefore, that the other worms were not in a state of sexual maturity.

In the other parts of its organisation no peculiarities could be observed; the eight and ninth septa are absent, those of segments XI, XII and XIII are rather thick.

A bell-shaped gizzard occupies segments IX and X; a long, digitiform coecum lies in segment XXVI and extends forward over five segments.

There are two pairs of tongue-shaped vesiculae seminales in segments XI and XII, connected with each other and including the ciliated funnels. A large fan-shaped ovary is attached at the anterior septum of segment XIII.

The specimens could not be referred to one of the Malayan *Perichaeta*-species already known, though three species from this region are described, which possess also two pairs of spermathecae with a long, wound diverticulum i. e. *P. musica* Horst (Java), *P. longa* Mich. (Sumatra) and

1) Zoolog. Jahrbücher, Systematik, Bd. VI, 1893, p. 755.

P. fasciata Rosa (Engano). *P. longa*, as stated by Michaelsen, much resembles *P. musica* and is only distinguished by the shape of the male pores and the smaller number of setae; perhaps both species are identical, for the shape of the male pores appears to me not to be constant and as already stated in my earlier paper, in small specimens of *P. musica* the number of setae amounts only to 60 or 70. Our species from Soemba appears to be distinguished from *P. fasciata* and *P. musica* as well by a smaller number of setae as by a different situation of the male pores.

Perichaeta Tenkatei n. sp.

Three specimens collected by Dr. ten Kate at Wamga-poe in the North of the island Soemba.

Besides the preceding species three other *Perichaetae* were collected in Soemba, which are distinguished by their more slender appearance, tapering anteriorly and posteriorly.

The body measures 85 mm. in length; the number of segments is about 100. The clitellum shows distinct dorsal pores, not visible in the preceding species; the first dorsal pore lies in the intersegmental groove XI/XII. The prostomium extends back over the half of the buccal segment. The setae are arranged in a continuous row, upon a distinct ridge; there are about 50 of them on the segments in the vicinity of the clitellum, but none on the clitellum itself.

Two pairs of spermathecal pores lie at the ventral side of the body in the intersegmental grooves VII/VIII and VIII/IX. The male pores, situated on large papillae, present themselves as semilunar fissures, surrounded by a border, the half of which is crenulated, while the other half forms a lid, that covers the pore, like with *P. capensis* (*operculata* Rosa).¹⁾

The spermathecae (fig. 4) strike the eye by the large-

1) Exotische Terricolen; Ann. K. K. Naturhist. Hofmuseums, Wien, Bd VI, 1891, pl. XIV, fig. 6.

ness of their diverticulum, which occupies a great portion of the segment; each of them consists of a thin, folded sac, with a short duct, and of a large U-shaped, muscular diverticulum, which is much longer than the main sac and near its distal end suddenly narrows and terminates in a globular vesicle.

The eight and ninth segments are absent. The gizzard, occupying segments IX and X, is bell-shaped, not very long. The intestinal coeca of segment XXVI, are not very large, extending over four segments. Two pairs of large seminal vesicles occupy segments XI and XII. In segment XIII, attached to the anterior septum above each ovary, a comma-shaped body was observed; perhaps they represent a second pair of receptacula ovarum, as found by Beddard in *P. mauritiana*.¹⁾

Perichaeta capensis Horst.²⁾

Specimens were collected in Timor by Dr. ten Kate, at Buitenzorg by Dr. Boerlage and at Tjibodas by Dr. van Bemmelen.

Perichaeta urceolata n. sp.

Ten specimens were collected by Dr. Vorderman in the Lampongs (Sumatra).

A slender worm, tapering at its anterior and posterior extremity, of a pale yellow-brown colour, with the zones of setae whitish. The largest specimen measures 110 mm. in length. The cephalic lobe reaches back till the half of the buccal segment, which is small. The clitellum is distinct, devoid of setae.

The spermathecal pores are represented by a pair of distinct fissures, situated laterally in the intersegmental groove V/VI.

A single oviducal pore on a white area. The male pores are plain fissures, not surrounded by a wall, situated in the

1) Proc. Zoolog. Society, 1892, p. 170, pl. X, fig. 5.

2) Loc. cit. p. 62, pl. III, figs. 24—26.

series of the 7th seta; there are 12 setae between both pores.

The circles of bristles are continuous, except in the dorsal median line; there are 36 à 40 of them upon each segment.

The spermathecae (fig. 5), situated in segment VI, consist of a rather large, urceolate pouch and of a bended, tubular diverticulum, that reaches till about two thirds of the main pouch and before opening in it suddenly narrows. I found the diverticulum, as usually, entirely filled with sperma, whereas the pouch contained sand and other strange material, giving it a blackish colour.

In one specimen another pair of spermathecae, smaller than the anterior ones, was observed in segment VII, opening in the intersegmental groove VI/VII.

As to its internal structure this species agrees with other *Perichaetae*; a well-developed prostata is present, provided with a S-like bended duct, terminating in a dilated sac. In some specimens this dilated part is protruded to the exterior. There are in segments XI and XII two pairs of large, tongue-shaped seminal vesicles, each with a hooked appendage at the distal extremity. Long intestinal coeca occur in segment XXVI.

Several *Perichaeta*-species, provided with only a single pair of spermathecae, are already known, as well from the Malay Archipelago (*P. quadragenaria* Perr., *racemosa* Rosa, *P. sangirensis* Mich., *P. minima* Horst, *P. sp.* from Flores) as from other isles in the Indian and Pacific Ocean (*P. novaræ* Rosa, *P. vitiensis* Bedd., *P. taprobanae* Bedd., *P. pulchra* Mich.); but with none of these species the *Perichaetae* from the Lampongs could be identified, because all those species have not only spermathecae of a different shape, but their spermathecal pores lie also more backward. With *P. minima* those pores are situated on segment VII, with *P. racemosa* in the intersegmental groove VIII/IX and with the other ones in the groove between segment VII and VIII.

Notes from the Leyden Museum, Vol. XV.

Perichaeta Martensi Michaelsen.

A single specimen from the Lampongs (Sumatra), collected by Dr. Vorderman.

Among the specimens of *P. urceolata* I met with an individual, provided with four pairs of spermathecae, which agree in their structure with the spermathecae of *P. Martensi* (from Banka), as described and figured by Michaelsen ¹). The characteristic of those organs is, that the slender, club-shaped diverticulum possesses another small, globular, sessile diverticulum; in our specimen the greater part of spermathecae showed this character, however in three of them it was absent. It seems to me liable to question whether *P. Martensi* must not be considered a variety of *P. indica*, for in my paper on Sumatra-earthworms ²) I pointed out, that in some specimens of this species (from Soepajang) the tube of the diverticulum in the middle of its length possessed another tubular appendage.

Perichaeta Bosschae n. sp.

A single specimen, collected by dr. Bosscha in Sambas, Borneo.

I received two *Perichaeta*'s from Borneo, but one of them was not in a state of sexual maturity and could therefore not be identified; the other one appears to me to belong to a new species. It is a rather large worm, dark-brown over the total surface of the body, with white circles of setae; its length is 170 mm. The number of segments is 125. The cephalic lobe distinct, extending back over two-thirds of the buccal segment. A dark-coloured clitellum, without setae. The male pores have the shape of fissures, only surrounded by a faint wall; the oviducal pore is single. Four pairs of spermathecal pores

1) Archiv für Naturgesch. 1892, p. 34, pl. XIII, fig. 20.

2) Midden-Sumatra, reizen en onderzoek. der Sumatra-expeditie, 1877—79, Natuurl. Hist., Dl. IV, 2, Pl. I, fig. 16.

are situated laterally in the intersegmental grooves V/VI, VI/VII, VII/VIII and VIII/IX. The first dorsal pore lies in the groove between segments XII and XIII. There are no copulatory papillae. Each spermatheca (fig. 6) consists of a rather large, oval sac, with a distinct, tubular duct and a small oblong, pyriform diverticulum, as long as the excretory duct. The prostata is a fan-shaped, compact (not lobed) gland, with a short, thick muscular duct. Of the intestinal coeca in segment XXVI only that of the left side could be observed; it is a rather long appendage, faintly lobed at the external side of its inferior half, like in *P. mandhorensis* Mich. ¹). The remaining structure shows no peculiarities.

This specimen could not be referred to one of the known Malayan species, which are also provided with four pairs of spermathecae. In *P. neoguineensis* Mich. whose spermathecae are also provided with a small diverticulum, the spermathecal pores at the ventral side are situated so next to each other, that the distance between both spermathecae of the same segment is smaller than that between the spermathecae of two succeeding segments; moreover the intestinal coeca appear to be absent. *P. enganensis* Rosa and *P. Modiglianii* Rosa have their spermathecae provided with a long diverticulum, while in *P. Martensi* Mich. and *P. indica* Horst these organs have a totally different shape. *P. posthuma* Vaill. and *P. Vordermanni* Horst possess copulatory papillae in the vicinity of the male pores.

Perichaeta longa Michaelsen.

A single specimen from Tjibodas (Java), collected by Dr. van Bemmelen.

A mutilated worm, only 65 mm. long, wanting its posterior end, appears to be referable to Michaelsen's *P.*

1) loc. cit. Pl. XIII, fig. 19.

longa, though the dimensions of his specimen are much greater. The spermathecae agree very well with Michaelson's figures, only their blind end has a more dilated, tongue-shaped appearance.

Perichaeta tjibodae n. sp.

Two specimens from Tjibodas (Java), collected by Dr. van Bemmelen.

Among the worms, collected at Tjibodas, there are two specimens, which, though resembling in many respects *P. capensis* Horst (— *operculata* Rosa), cannot, as I believe, be identified with that species. The smallest example has a length of about 50 mm.; the largest one is incomplete. The colour is olive-brown; the anterior end of the body with the clitellum is greyish.

The cephalic lobe with a broad appendix extending back till the half of the buccal segment. Clitellum distinct, without setae. Two pairs of spermathecal pores, situated entirely ventrally, in the intersegmental grooves VII/VIII and VIII/IX; the distance between the pores of one segment hardly $1\frac{1}{2}$ times that between the pores of two succeeding segments. The pores of a pair are connected together by an indistinct, transverse, glandular area (fig. 7). Oviducal pore single on segment XIV; male pores on segment XVIII, triradiate, as the mouth of a leech, separated by a deepened area, extending over the segment in front and that behind. Setae in a continuous ring, 44 in number. Eight setae between the male pores. No copulatory papillae. The spermathecae (fig. 7a) are very large; the first pair lie in segment VIII, the second one in segments VIII and IX, extending along the total length of the gizzard. Each spermatheca consists of a large, globular sac with a short excretory duct and of a tubular diverticulum, terminating in a small, oval vesicle; this diverticulum is curved like a horn and extends along the superior half of the main sac. The sac shows a yel-

lowish colour and is of a hard consistency, as if its wall contained chitine; however on traverse sections it appears to have a normal structure and its hardness to be only due to a secretion, probably coagulated by the influence of alcohol. The diverticulum possesses a thick, muscular, folded wall.

The prostata is a large gland, consisting of numerous lobes and extending over segments XVI—XXII; its excretory duct is longer than it is ordinarily the case with *Perichaeta* and therefore it is curved, as shown in fig. 7*b*; the first part of the duct, in which the vas deferens opens, near its origine from the prostate, is membranaceous; next to the ventral median line, before turning back, it passes into the muscular part, which terminates in a dilated sac. The internal structure as usually.

Two pairs of tongue-shaped seminal vesicles in segments XI and XII. There is a bell-shaped gizzard in segments VIII and IX; the short conical, intestinal coeca of segment XXVI extend over four segments. Three pairs of abdominal hearts occupy segments XI, XII and XIII.

In the shape of the spermathecae and the ventral position of their external orifices this worm much agrees with *P. operculata* Rosa (— *capensis* Horst). However according to Rosa's description this species is distinguished by its small cephalic lobe, without posterior appendix, which is coalesced with the buccal segment; moreover its prostata-duct is short and straight.

Perichaeta inflata n. sp.

A single specimen from Tjibodas, collected by Dr. van Bemmelen.

A small worm, measuring only 55 mm. in length. Its body tapering at the anterior and posterior end, is of a yellowish brown colour; the clitellum is darker. A rather large, rectangular prostomium extends back till the half of the buccal segment.

Two pairs of spermathecal pores in the intersegmental

Notes from the Leyden Museum, Vol. XV.

grooves VII/VIII and VIII/IX; the male pores are represented by fissures, with a crenulated border and surrounded by a glandular wall. There are no copulatory papillae.

The setae are arranged in a continuous circle, upon a prominent ridge of white colour; no setae on the clitellum. Two pairs of spermathecae; each of them (fig. 8) consists of a not very large, globular sac, with short duct and of a diverticulum, represented by a long, slender, twisted tube, which terminates in a small pyriform vesicle. Before terminating in this vesicle the tube shows a large, oblong dilatation. The prostata is a rather large gland, consisting of numerous lobes, and opening on the exterior by a straight, narrow, membranaceous duct, which terminates in a dilated sac.

This species appears to be allied to *P. fasciata* Rosa from Engano.

Perichaeta musica Horst.

A single specimen from the Gedeh (Java), collected by Dr. Vorderman.

This specimen has a singular appearance, being rather stout but very short. The diameter of the body in front of the clitellum is 17 mm.; its length is only 21 cm. The number of segments is about 65.

Pontoscolex corethrurus F. Müller.

Several specimens from the Lampongs (Sumatra), collected by Dr. Vorderman.

Benhamia malayana Horst.

Two specimens from Poeloe Samao, by Dr. ten Kate; one specimen from Tandjong Morawa (Sumatra) by Dr. Hagen.

Benhamia floresiana Horst.

Two specimens from Amarassi in Timor, collected by Dr. ten Kate.

Notes from the Leyden Museum, Vol. XV.

Benhamia Annae Horst.

Three specimens from Buitenzorg, collected by Dr. van Bemmelen.

EXPLANATION

OF

Plate 10.

- Fig. 1. *Perichaeta falcata*: Spermatheca. \times 11 diam.
 Fig. 2. ?*Perichaeta sangirensis*: Spermatheca. \times 15 diam.
 Fig. 3. *Perichaeta variabilis*: Spermatheca of the left side;
 3a spermatheca of the right side. \times 8 diam.
 Fig. 4. *Perichaeta Tenkatei*: Spermatheca. \times 8 diam.
 Fig. 5. *Perichaeta urceolata*: Spermatheca. \times 8 diam.
 Fig. 6. *Perichaeta Bosschae*: Spermatheca. \times 10 diam.
 Fig. 7. *Perichaeta tjibodae*: Ventral view of segments
 VII—IX and XIV—XIX; 7a. Spermatheca; 7b.
 Prostata. \times 8 diam.
 Fig. 8. *Perichaeta inflata*: Spermatheca. \times 12 diam.
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INDEX.

A.

- abrasus (Molossus) [281](#).
 Acanthyllis [205](#).
 Accentor [193](#).
 Accipiter [210](#).
 Accipitres [208](#), [238](#), [239](#).
 Acredula [194](#).
 Acrocephalus [192](#).
 Actiturus [229](#).
 acuta (Anas) [187](#).
 „ (Dafila) [218](#).
 Adeniophis [256](#).
 Aedon [192](#).
 Aegialitis [184](#), [225](#).
 aegocephala (Limosa) [230](#).
 Aegus [128](#).
 aeneolus (Amarygmus) [58](#).
 aequecostatus (Bradymerus) [20](#).
 aeruginosus (Circus) [209](#).
 aesalon (Falco) [212](#).
 aethiopicus (Phacochoerus) [265](#).
 affinis (Fuligula) [219](#).
 „ (Glenea) [1](#).
 „ (Helota) [160](#).
 „ (Leiolophus) [287](#).
 „ (Pachyteria) [13](#).
 agami (Ardea) [122](#).
 Agaristidae [166](#).
 Agonischius [127](#).
 Agraeus [125](#).
 Alauda [204](#).
 alaudarius (Tinnunculus) [212](#).
 alba (Ardea) [213](#).
 alba (Ciconia) [214](#).
 „ (Motacilla) [195](#).
 albatus (Chen) [216](#).
 albellus (Mergus) [221](#).
 albeola (Clangula) [220](#).
 albicilla (Haliæetus) [210](#).
 albicollis (Rhipidura) [68](#), [74](#).
 albifrons (Anser) [216](#).
 albifrontata (Rhipidura) [71](#), [98](#).
 albilimbata (Rhipidura) [68](#), [75](#).
 albina (Helix) [152](#).
 albiscapa (Rhipidura) [67](#), [72](#).
 albiventris (Rhipidura) [66](#), [70](#), [84](#).
 albopectoralis (Platyopisthen) [242](#).
 Alca [237](#).
 Alcedo [206](#).
 alcyon (Ceryle) [206](#).
 alektor (Crax) [124](#).
 Alektorides [224](#), [238](#), [239](#).
 alle (Mergulus) [238](#).
 alpestris (Otocorys) [205](#).
 Alpheus [284](#), [300](#).
 alpina (Tringa) [228](#).
 alternicolor (Eucyrtus) [35](#).
 „ (Platycrepis) [35](#).
 aluco (Syrnium) [207](#).
 alveolata (Purpura) [103](#).
 Amarygmus [57](#).
 Amaurornis [270](#).
 Amblycephalus [255](#).
 amboinensis (Cyclotus) [156](#).
 „ (Macrochlamys) [149](#).
 ambusta (Rhipidura) [86](#).
 americanus (Coccyzus) [207](#).

- americana (Mareca) [217](#).
 Ampelis [197](#).
 Amphiesma [255](#).
 anaesthesia (Hydrochelidon) [232](#).
 Anas [64](#).
 Anas [187](#), [218](#).
 andamanus (Encyalesthus) [26](#).
 andamauensis (Poteriophorus) [247](#).
 anglica (Sterna) [232](#).
 anglorum (Puffinus) [235](#).
 angustifrons (Sesarma) [288](#).
 Annae (Benhamia) [328](#).
 anomala (Thalassina) [314](#).
 Anous [232](#).
 Anser [184](#), [215](#).
 Anseres [215](#), [238](#), [239](#).
 anthracinus (Dietysus) [60](#).
 Anthus [184](#), [196](#).
 Apatela [163](#).
 Apatetica [248](#).
 Aphaniotis [251](#).
 apiaster (Merops) [206](#).
 apivorus (Pernis) [211](#).
 approximans (Rhyparus) [145](#).
 Apsarasa [165](#).
 apus (Cypselus) [205](#).
 aquaticus (Acrocephalus) [193](#).
 " (Cinclus) [193](#).
 " (Rallus) [223](#).
 Aquila [209](#).
 arborea (Alauda) [204](#).
 Archibuteo [209](#).
 arctica (Fratereula) [238](#).
 arcticus (Colymbus) [236](#).
 Ardea [122](#), [213](#).
 Ardetta [213](#).
 arenaria (Calidris) [229](#).
 argentatus (Larus) [233](#).
 arquatus (Numenius) [231](#).
 Artactes [29](#).
 Artibeus [281](#).
 aruensis (Gerygone) [259](#).
 arvensis (Alauda) [204](#).
 " (Anser) [215](#).
 Asbolodes [55](#), [56](#).
 asiatica (Aegialitis) [184](#), [226](#).
 asiaticus (Cinnyris) [180](#).
 Asio [207](#).
 assimilis (Rhipidura) [71](#), [95](#).
 astrolabi (Rhipidura) [69](#), [78](#).
 Astur [210](#).
 Atalapha [278](#).
 ater (Parus) [194](#).
 Athene [208](#).
 atra (Fulica) [224](#).
 " (Rhipidura) [68](#), [73](#).
 atrata (Rhipidura) [74](#).
 atratus (Cathartes) [122](#).
 atricapilla (Muscicapa) [198](#).
 " (Sylvia) [191](#).
 atricapillus (Astur) [210](#).
 atrigularis (Rhipidura) [76](#).
 " (Turdus) [188](#).
 atronitens (Molothrus) [118](#).
 Atropophis [256](#).
 Atropos [257](#).
 atrum (Cyrtosoma) [56](#).
 Aubryi (Sesarma) [284](#), [287](#).
 Aulacodus [265](#).
 aura (Cathartes) [121](#).
 aureola (Emberiza) [202](#).
 auricularis (Rhipidura) [71](#), [97](#).
 auritus (Podiceps) [236](#).
 aurobasalis (Eucyrtus) [41](#).
 australasiae (Iphthimorhinus) [244](#).
 australis (Ocydromus) [268](#).
 Avicennia [122](#).
 avocetta (Recurvirostra) [226](#).
- B.**
- Bailloni (Porzana) [223](#).
 barbarus (Falco) [211](#).
 barbata (Porcellana) [226](#).
 barbatus (Petroliastes) [284](#), [296](#).
 basalis (Pachyteria) [13](#).
 bassana (Sula) [212](#).
 Batesi (Pachyteria) [14](#).
 Batrachia [257](#).
 beatrix (Glenea) [2](#).
 Benhamia [328](#).
 Bernicla [216](#).
 Bewicki (Cygnus) [217](#).
 biarmicus (Panurus) [193](#).
 bicolor (Chrysomela) [31](#).
 " (Homoeorhipis) [18](#).
 " (Necrobioides) [28](#).
 Bidessus [105](#).
 bifasciata (Ceropria) [22](#).
 " (Loxia) [201](#).
 bifoveata (Ceropria) [21](#).
 bisbiguttata (Glenea) [5](#).

boa (*Amblycephalus*) 255.
 boops (*Dipsas*) 255.
 borealis (*Numenius*) 230.
 borneensis (*Atropophis*) 256.
 " (*Gonyocephalus*) 251.
 boschas (*Anas*) 187, 218.
 Bosschae (*Perichaeta*) 324.
 Botaurus 214.
 Bothrops 256.
 Boysi (*Helota*) 140.
 brachyactyla (*Calandrella*) 205.
 Bradymorus 19.
 brachyotus (*Asio*) 207.
 brachyrhyncha (*Rhipidura*) 70, 73, 82,
 113.
 brachyrhynchus (*Anser*) 216.
 Brechloyi (*Rhipidura*) 67, 72.
 brenta (*Bernicla*) 216.
 brevicauda (*Carollia*) 281.
 brevicornis (*Encyalesthus*) 28.
 britannicus (*Parus*) 194.
 Brithys 164.
 Bruennichi (*Lomvia*) 237.
 brunneipectus (*Gerygone*) 259.
 Bubo 208.
 bubuleus (*Ardea*) 213.
 Bulgeri (*Rhipidura*) 67, 72.
 Bulweria 235.
 buruensis (*Rhipidura*) 70, 92.
 Buteo 209.

C.

Caccabis 222.
 caelebs (*Fringilla*) 200.
 caelestis (*Gallinago*) 227.
 caesia (*Sitta*) 195.
 Calamaria 252.
 Calandrella 205.
 Calcarius 202.
 Calidris 229.
 calidris (*Totanus*) 229.
 Callirhipis 146.
 Calotes 252.
 calumniata (*Pachyteria*) 13.
 Camaria 54.
 campestris (*Anthus*) 196.
 canaliculatus (*Cyclommatus*) 128.
 candicans (*Hierofalco*) 211.
 candidus (*Himantopus*) 227.
 canescens (*Melospiza*) 102.
 canescens (*Totanus*) 230.
 cannabina (*Linota*) 200.
 canorus (*Cuculus*) 207.
 cantiaca (*Sterna*) 232.
 cantiana (*Aegialitis*) 225.
 canus (*Larus*) 233.
 " (*Gecinus*) 206.
 canutus (*Tringa*) 229.
 capensis (*Mollivora*) 100.
 " (*Perichaeta*) 321.
 " (*Ratelus*) 264.
 Caprimulgus 205.
 carbo (*Phalacrocorax*) 212.
 carbunculus (*Eucyrtus*) 42.
 Carduelis 198.
 caribseus (*Rallus*) 266.
 Caridina 284, 300.
 carinipes (*Petrolisthes*) 299.
 carolinensis (*Querquedula*) 218.
 Carollia 281.
 Carpodacus 201.
 caryocatactes (*Nucifraga*) 203.
 casarca (*Tadorna*) 217.
 caspia (*Sterna*) 231.
 castaneipes (*Pseudeumolpus*) 51.
 castaneus (*Turdinus*) 261.
 Castanolimnas 274.
 Catapiestus 28.
 catarrhactes (*Stercorarius*) 234.
 Cathartes 121.
 Catoblepas 182.
 caudacuta (*Acanthyllis*) 205.
 caudata (*Acredula*) 194.
 cayennensis (*Myiozetetes*) 119.
 caudolineatus (*Dendrophis*) 255.
 celebensis (*Glenea*) 2, 3, 12.
 " (*Hypotaenidia*) 268.
 " (*Merula*) 109.
 " (*Rhipidura*) 69, 79.
 " (*Turdinus*) 261.
 conchris (*Tinnunculus*) 212.
 cephus (*Stercorarius*) 234.
 ceramensis (*Omphalotropis*) 157.
 Ceratophora 251.
 Cerberus 255.
 Cercopithecus 262.
 Ceropria 21, 39.
 Certhia 198.
 cervina (*Rhipidura*) 67, 73.
 cervinus (*Anthus*) 184, 196.
 Coryle 206.

- ceylonica (Cyrena) [158](#).
 chalybaea (Glenea) [1](#), [12](#).
 Chama [158](#).
 Chamoepelia [123](#).
 Charadrius [225](#).
 Chaulelasmus [218](#).
 Chelidon [198](#).
 Chen [216](#).
 chiragra (Gonodactylus) [284](#), [310](#).
 chloris (Ligurinus) [199](#).
 Chloritis [150](#).
 chloropus (Gallinula) [223](#).
 chrysaetus (Aquila) [210](#).
 chrysargum (Amphiesma) [255](#).
 Chrysobothris [177](#).
 chrysogaster (Gerygone) [259](#).
 Chrysomela [31](#).
 Chrysomitris [199](#).
 cia (Emberiza) [202](#).
 Ciconia [214](#).
 Cinclus [193](#).
 cineraceus (Circus) [209](#).
 cinerea (Ardea) [213](#).
 " (Perdix) [222](#).
 " (Rhipidura) [71](#), [92](#).
 " (Sylvia) [191](#).
 cinereum (Todirostrum) [119](#).
 cinereus (Anser) [187](#), [215](#).
 cinnamomea (Rhipidura) [70](#), [82](#), [113](#).
 " (Symallaxis) [120](#).
 cinnamomeus (Melanoxanthus) [126](#).
 Cinneryis [179](#).
 eioides (Emberiza) [184](#), [202](#).
 Circaetus [209](#).
 circia (Querquedula) [218](#).
 Circus [209](#).
 cirrus (Emberiza) [202](#).
 citrina (Nanina) [148](#).
 citrinella (Emberiza) [202](#).
 clanga (Aquila) [209](#).
 Clangula [219](#).
 clavus (Melania) [154](#).
 Cleomis [154](#).
 Clibanarius [284](#), [300](#).
 clypeata (Spatula) [218](#).
 clytia (Glenea) [1](#), [12](#).
 Cnadolon [54](#).
 coarans (Chama) [158](#).
 " (Cyrena) [158](#).
 " (Venus) [158](#).
 coccinea (Porcellum) [296](#).
 Coccothraustes [199](#).
 Coccystes [207](#).
 Coccyzus [207](#).
 Cockerelli (Rhipidura) [72](#), [98](#).
 " (Sauloprocta) [98](#).
 Coenobita [284](#), [300](#).
 coeruleus (Parus) [194](#).
 colchicus (Phasianus) [222](#).
 collaris (Accentor) [193](#).
 " (Muscicapa) [198](#).
 " (Pachyteria) [13](#).
 collurio (Lanius) [197](#).
 Columba [123](#), [221](#).
 Columbae [221](#), [238](#), [239](#).
 columbina (Bulweria) [235](#).
 Colymbus [236](#).
 communis (Coturnix) [222](#).
 " (Grus) [224](#).
 " (Turtur) [221](#).
 compacta (Uloma) [23](#).
 Comptosoma [254](#).
 concinnula (Hypsa) [166](#).
 concolor (Turdus) [108](#).
 congieus (Sciurus) [265](#).
 consobrinus (Gymnodactylus) [250](#).
 conspicillatus (Tropidonotus) [255](#).
 consul (Macrochlamys) [149](#).
 convexicollis (Oxyopisthen) [242](#).
 convexus (Amarygmus) [58](#).
 Coprini [144](#).
 Coracias [206](#).
 corallinus (Clibanarius) [284](#), [300](#).
 corax (Corvus) [204](#).
 cordimana (Oecypode) [284](#), [286](#).
 Corethrura [269](#).
 corethrurus (Pontoscolex) [328](#).
 cornea (Neritina) [158](#).
 cornix (Corone) [204](#).
 cornuta (Tadorna) [217](#).
 cornutus (Draco) [250](#).
 corona (Glenea) [2](#).
 corone (Corvus) [204](#).
 Corruscus (Artactes) [31](#).
 Corvus [204](#).
 Cosmonetta [220](#).
 costata (Paludina) [155](#).
 Cotile [198](#).
 Coturnix [222](#).
 crassidens (Pythia) [154](#).
 crassimanus (Leptodius) [284](#).
 Crax [124](#).

Crocca (*Anas*) 187.
 " (*Querquedula*) 218.
Creciscus 270.
Crecopsis 274.
crenilabre (*Leptopoma*) 155.
crenulata (*Melania*) 154.
crenulicollis (*Catapiestus*) 29.
crepidatus (*Stercorarius*) 234.
crepitans (*Rallus*) 266.
Crex 223, 269, 270, 274.
cribripennis (*Simianus*) 18.
crinipes (*Geograpus*) 287.
cristatellus (*Calotes*) 252.
cristata (*Alauda*) 204.
 " (*Fuligula*) 219.
cristatus (*Parus*) 195.
 " (*Podiceps*) 236.
 " (*Regulus*) 191.
Cryptolopha 260.
cucullatus (*Mergus*) 221.
Cuculus 207.
euronica (*Aegialitis*) 225.
curruca (*Sylvia*) 191.
Cursorius 225.
Curvipes (*Helota*) 131, 133.
curvirostra (*Loxia*) 201.
Cyanecula 190.
cyaneicollis (*Artactes*) 32.
cyaneolimbatus (*Artactes*) 30.
cyaneus (*Artactes*) 30.
 " (*Circus*) 209.
cyaneiceps (*Rhipidura*) 66, 70, 84.
Cyclommatus 128.
Cyclotus 156.
Cygnus 187, 217.
Cynoebus 262.
cynosurus (*Cercopithecus*) 262.
 " (*Cynoebus*) 262.
cyprinoides (*Cyrena*) 158.
Cypselus 205.
Cyrena 158.
Cyrtosoma 55.
Cyrtostomus 180.

D.

Dafila 218.
Danae (*Thalamita*) 284, 285.
Daulias 190.
decretus (*Pseudeumolpus*) 48.
decumanus (*Ostinops*) 117.

Delia (*Glenea*) 1, 2, 8.
Dendrocygna 123.
Dendrocopus 205.
dendrophila (*Dipsas*) 255.
Dendrophis 255.
Dendrornis 120.
dentatus (*Petrolisthes*) 296.
denticollis (*Rhyparus*) 144.
denticulatifrons (*Remipes*) 284, 288.
depressum (*Oxyopisthen*) 241.
deserti (*Saxicola*) 189.
Desgodinsi (*Helota*) 160, 131, 140.
Desjardinsii (*Rhyparus*) 17, 146.
Desmodus 282.
Diana (*Glenea*) 12.
Dicaeum 180.
diemenensis (*Rhipidura*) 67, 72.
Dietysus 60.
diluta (*Rhipidura*) 70, 84.
dimidiata (*Crex*) 269.
 " (*Nanina*) 148.
Dipsas 255.
discolor (*Dendrocygna*) 123.
discors (*Querquedula*) 218.
dispar (*Palaemon*) 284, 303.
divarigata (*Cyrena*) 158.
dives (*Gauromaia*) 33.
divisus (*Bidessus*) 105.
Dolium 276.
domesticus (*Anser*) 187.
 " (*Passer*) 199.
Doriae (*Homalophis*) 255.
Dougallii (*Sterna*) 231.
Draco 250.
dryas (*Rhipidura*) 69, 78.
Dryophis 255.
dubium (*Goniosoma*) 286.
Dunkeri (*Dolium*) 276.

E.

Earli (*Ocydromus*) 268.
eburnea (*Pagophila*) 232.
Ectopistes 222.
Edwardsii (*Alpheus*) 284, 300.
Elanoides 211.
elegans (*Carduelis*) 198.
 " (*Corothrura*) 269.
 " (*Glenea*) 2, 12.
 " (*Rallus*) 266.
elegantula (*Rhipidura*) 68, 76.

elongatus (Petrolisthes) [289](#).
 Emberiza [184](#), [201](#).
 Encyalesthus [25](#).
 enganensis (Perichaeta) [325](#).
 enucleator (Pinicola) [201](#).
 episcopalis (Rhipidura) [90](#).
 episcopus (Tanagra) [116](#).
 epops (Upupa) [207](#).
 Erismatura [220](#).
 Erithacus [190](#).
 Erythrine [120](#).
 erythrinus (Carpodacus) [201](#).
 erythronota (Rhipidura) [68](#), [75](#).
 erythrophthalmus (Coccyzus) [207](#).
 erythropus (Neocrex) [270](#).
 Eucyrtus [34](#).
 Eudromias [226](#).
 Eupalaemon [303](#).
 europaea (Pyrrhula) [201](#).
 europaeus (Caprimulgus) [205](#).
 Eurytrachelus [128](#).
 euryura (Rhipidura) [70](#), [91](#).
 exaratus (Leptodius) [285](#).
 excubitor (Lanius) [197](#).

F.

Fairmairei (Helota) [140](#).
 falcata (Perichaeta) [316](#).
 falcinellus (Plegadis) [215](#).
 Falco [211](#).
 fallax (Rhipidura) [68](#), [73](#).
 familiaris (Certhia) [198](#).
 fasciata (Helix) [152](#).
 " (Pachyteria) [13](#).
 " (Perichaeta) [320](#).
 " (Rallina) [269](#).
 fasciolatus (Eucyrtus) [42](#).
 Faeae (Helota) [111](#).
 felina (Genetta) [263](#).
 femoralis (Gauromaia) [33](#).
 ferina (Fuligula) [219](#).
 ferruginea (Nyroca) [219](#).
 figurata (Apsarasa) [165](#).
 Finschi (Rhipidura) [71](#), [95](#).
 flabellifera (Rhipidura) [67](#), [72](#), [73](#).
 flammea (Strix) [207](#).
 flava (Motacilla) [196](#).
 flaveola (Gerygone) [174](#).
 flavirostris (Linota) [200](#).
 flexuosa (Mauritia) [123](#).

florensis (Glenea) [9](#).
 floresiana (Benhamia) [328](#).
 fluviatilis (Sterna) [231](#).
 " (Tachybaptus) [237](#).
 Forbesii (Perichaeta) [319](#).
 formosus (Leptophis) [255](#).
 foveolatum (Strongylium) [61](#).
 Franki (Gallinula) [270](#).
 Fratercula [238](#).
 frenatus (Hemidactylus) [250](#).
 Fringilla [200](#).
 frugilegus (Corvus) [204](#).
 Fulica [224](#).
 Fulicariae [223](#), [238](#), [239](#).
 fulicarius (Phalaropus) [227](#).
 fuliginosa (Rhipidura) [67](#), [73](#).
 " (Sterna) [232](#).
 Fuligula [219](#).
 Fulmarus [235](#).
 fulminata (Helix) [153](#).
 fulvitaris (Helota) [140](#).
 fulvocarnea (Macrochlamys) [149](#).
 fulvus (Charadrius) [225](#).
 " (Gyps).
 fumidus (Turdus) [107](#), [109](#).
 fumosa (Rhipidura) [86](#).
 funerarium (Oxyopisthen) [241](#).
 funerea (Surnia) [208](#).
 funiculus (Melania) [154](#).
 furcato-radiata (Septaria) [158](#).
 furcatus (Elanoides) [211](#).
 furvus (Troglodytes) [116](#).
 fusca (Oedemia) [220](#).
 fuscatus (Encyalesthus) [25](#).
 fuscicollis (Tringa) [228](#).
 fuscorufa (Rhipidura) [70](#), [84](#).
 fuscus (Larus) [233](#).
 " (Totanus) [230](#).

G.

galactodes (Aedon) [192](#).
 galbula (Oriolus) [197](#).
 gallicus (Circæetus) [209](#).
 " (Cursorius) [225](#).
 Gallinae [222](#), [238](#), [239](#).
 Gallinago [227](#).
 Gallinula [223](#), [270](#).
 gallinula (Lymnocryptes) [227](#).
 garrula (Coracias) [206](#).
 Garrulus [203](#).

garrulus (Ampelis) [197](#).
 garzetta (Ardea) [213](#).
 Gauromaia [33](#).
 Gavinae [231](#), [238](#), [239](#).
 Gecinus [206](#).
 Genetta [263](#).
 geometrica (Testudo) [312](#).
 Geograpsus [284](#), [287](#).
 Gervaisi (Calamaria) [254](#).
 Gerygone [174](#), [258](#).
 gibbicolle (Strongylium) [62](#).
 gibbosulus (Eucyrtus) [41](#).
 giganteus (Eucyrtus) [34](#).
 „ (Platycrepis) [34](#).
 glacialis (Colymbus) [236](#).
 „ (Fulmarus) [235](#).
 „ (Harelda) [220](#).
 glandarius (Coccytes) [207](#).
 „ (Garrulus) [203](#).
 Glareola [224](#).
 glareola (Totanus) [229](#).
 glauca (Erythrina) [120](#).
 glaucion (Clangula) [219](#).
 glaucus (Larus) [232](#).
 Glenea [1](#).
 Glossophaga [281](#).
 Glottula [164](#).
 Glottulidae [164](#).
 Gnaphaloryx [128](#).
 gonager (Nyctobates) [25](#).
 Goniosoma [284](#), [286](#).
 Gonodactylus [284](#), [310](#).
 Gonyocephalus [251](#).
 Gonyosoma. [255](#).
 Gortyna [164](#).
 Grabowskyi (Calamaria) [252](#).
 gracilipes (Caridina) [303](#).
 graculus (Phalacrocorax) [212](#).
 „ (Pyrrhocorax) [203](#).
 granaticollis (Bradymerus) [20](#).
 grandis (Bradymerus) [19](#).
 granulipennis (Bradymerus) [20](#).
 gratum (Strongylium) [63](#).
 Grayi (Geograpsus) [287](#).
 Grimmia [265](#).
 griseigena (Podiceps) [236](#).
 griseola (Chamaepelia) [123](#).
 griseus (Macrorhamphus) [230](#).
 „ (Nycticorax) [213](#).
 „ (Puffinus) [235](#).
 grisola (Muscicapa) [128](#).

Grus [224](#).
 grylle (Uria) [237](#).
 Gui (Scops) [208](#).
 guianensis (Leistes) [118](#).
 gularis (Rhipidura) [94](#).
 guttata (Helota) [134](#), [140](#), [160](#).
 guttifer (Artactes) [31](#).
 Gymnodactylus [250](#).
 Gyps [208](#).
 gyrfalco (Hierofalco) [211](#).

H.

Haematopus [226](#).
 haemorrhoea (Uloma) [24](#).
 haesitata (Oestrelata) [235](#).
 Hageni (Pachyteria) [13](#).
 Haliaetus [210](#), [212](#).
 hamadryas (Rhipidura) [69](#), [79](#).
 Hansteini (Eurytrachelus) [128](#).
 Harelda [220](#).
 Hasselti (Glenea) [9](#).
 hastatum (Phyllostoma) [281](#).
 hastatus (Petroliastes) [289](#).
 hebraica (Mila) [166](#).
 Helicina [157](#).
 Helix [147](#).
 Helodromas [229](#).
 helophoroides (Rhyparus) [145](#).
 helopinus (Pseudonautus) [53](#).
 Helota [111](#), [131](#), [160](#).
 helvetica (Squatarola) [235](#).
 Hemidactylus [250](#).
 Hemipodii [223](#), [238](#), [239](#).
 Heniconetta [220](#).
 Herodiones [213](#), [238](#), [239](#).
 Heterophaga [23](#).
 hiaticula (Aegialitis) [225](#).
 Hierofalco [211](#).
 Himantopus [227](#).
 Hirundo [198](#).
 histrionica (Cosmonetta) [220](#).
 Hoedti (Rhipidura) [71](#), [93](#).
 Holamara [23](#).
 Holbölli (Linota) [200](#).
 Homalophis [255](#).
 Homoeorhipis [18](#).
 Hornemanni (Linota) [200](#).
 hortensis (Sylvia) [191](#).
 hortulana (Emberiza) [202](#).
 hortulanus (Serinus) [199](#).

Humbata 234.
 immensus *Asbolodes* 56.
 Hyalina 149.
 hyrcia *Hydrochelidon* 232.
Hydrochelidon 232.
hydropodides *Amarygnus* 58.
 Hyza *Glenea* 3, 12.
hypertorus Chen, 216.
 (Phalaropus) 227.
hyperythra *Rhipidura* 68, 75.
Hypola 192.
hypoleucus *Triapoides* 229.
hypopyrrhus *Turdus* 107.
Hypotaenidia 267.
Hypsa 166.

I.

ichthyaetus (*Larus*) 233.
icterina (*Hypola*) 192.
icterocephalus (*Xanthosomus*) 118.
ictinus (*Milvus*) 210.
Idae (*Helicina*) 157.
ignavus (*Bubo*) 208.
ignicapillus (*Regulus*) 191.
iliacus (*Turdus*) 189.
Illigeri (*Glenea*) 2.
imbrum (*Strongylium*) 63.
immarginatus (*Eucyrtus*) 46.
immutabilis (*Cygnus*) 217.
imperialis (*Aquila*) 210.
impressiuscula (*Ananca*) 64.
indica (*Mellivora*) 22.
 " (*Perichaeta*) 324.
indicus (*Petrolisthes*) 284, 293.
induta (*Ceropria*) 22.
inermis (*Petrolisthes*) 284, 288.
inflata (*Perichaeta*) 327.
insolata (*Chrysobothris*) 177.
insularis (*Necrophorus*) 161.
intermedia (*Atalapha*) 278.
 " (*Porzana*) 269.
intermedium (*Leptopoma*) 156.
interpreter (*Strepsilas*) 226.
intestinalis (*Adeniophis*) 256.
Iphthimorhinus 244.
iridipennis (*Amarygnus*) 58.
iris (*Noritina*) 157.
irroredella (*Spilota*) 171.
isabellina (*Saxicola*) 184, 189.
islandica (*Clangula*) 220.

islandicus *Heterodactylus* 211.
Isula *Alcedo* 206.
isura *Rhipidura* 71, 96.
Iyas 264.

J.

jamaicensis *Circus* 270.
jaethina *Gastromais* 34.
Japalura 251.
japonum *Strongylium* 63.
japonicus *Petrolisthes* 289.
javana *Pachyteria* 13.
javanica *Merula* 107, 109.
 " (*Rhipidura*) 71, 97.
javanicus *Turdus* 107.
Jentiahi (*Hypotaenidia*) 268.
Jonaji (*Rallus*) 267.
Juno (*Glenea*) 9.

K.

Kaliella 150.
Keili (*Spilota*) 171.
keyensis (*Gerygone*) 255.
kordensis (*Rhipidura*) 71, 95.
Kubaryi (*Rhipidura*) 68, 76.
Kuhlii (*Ocypoda*) 284, 286.

L.

Laccophilus 106.
Lacertilia 250.
laevicollis (*Artactes*) 31.
laevigata (*Helota*) 136, 140.
lanigerum (*Strongylium*) 61.
Lanius 197.
Lagopus 222.
lagopus (*Archibuteo*) 209.
lapponica (*Limosa*) 280.
lapponicus (*Calcarius*) 202.
lar (*Palaemon*) 284, 304.
Larus 184, 232.
lateralis (*Heterophaga*) 28.
laticollis (*Eucyrtus*) 37.
latitarsis (*Platycrepis*) 36.
Layardi (*Rhipidura*) 68, 75.
Leeuweni (*Aegus*) 128.
Leiolophus 284, 287.
Leistes 118.
lentiginosus (*Botaurus*) 214.

Lenzi (Rhipidura) [71](#), [92](#).
 lepida (Rhipidura) [69](#), [81](#).
 lepidactyloides (Palaemon) [284](#), [308](#).
 lepidus (Artactes) [32](#).
 leporinus (Noctilio) [280](#).
 leptocheles (Petrolisthes) [289](#).
 Leptodius [284](#).
 Leptophis [255](#).
 Leptopoma [155](#).
 leptura (Saccopteryx) [280](#).
 Lessoni (Trochomorpha) [150](#).
 Leucocerca [66](#).
 leucocephala (Erismatura) [220](#).
 leuconota (Mellivora) [100](#).
 leuconotus (Ratelus) [263](#).
 leucopsis (Bernicla) [216](#).
 leucoptera (Hydrochelidon) [232](#).
 " (Loxia) [201](#).
 leucopterus (Larus) [233](#).
 leucorodia (Platalea) [214](#).
 leucorrhoea (Procellaria) [234](#).
 leucothorax (Rhipidura) [70](#), [90](#).
 Ligurinus [199](#).
 Limicola [228](#).
 Limicolae [224](#), [238](#), [239](#).
 Limnobaenus [269](#), [270](#).
 Limnopardalus [267](#).
 Limosa [230](#).
 Lina [43](#).
 linaria (Linota) [200](#).
 linea-alba (Oxyopisthen) [242](#).
 linearis (Stenophida) [129](#).
 lineatus (Draco) [251](#).
 lineolata (Helix) [151](#).
 Linota [200](#).
 liratus (Cyclotus) [156](#).
 literata (Varuna) [284](#), [286](#).
 Lithosina [166](#).
 liturata (Apsarasa) [166](#).
 livia (Columba) [221](#).
 Locustella [193](#).
 Lomaptera [143](#).
 Lomvia [237](#).
 longa (Perichaeta) [320](#), [325](#).
 longicauda (Actiturus) [229](#).
 longipes (Helota) [140](#).
 longirostris (Rallus) [266](#).
 Loxia [201](#).
 Lucasseni (Agraeus) [125](#).
 " (Laccophilus) [106](#).
 lugubris (Motacilla) [195](#).

lugubris (Quiscalus) [118](#).
 lumbricoidea (Calamaria) [252](#).
 luscini (Daulias) [190](#).
 luscinoidea (Locustella) [193](#).
 lutaria (Chama) [158](#).
 Lygosoma [252](#).
 Lymnocryptes [227](#).

M.

Mabuia [252](#).
 Machetes [229](#).
 Macgillavrayi (Rhipidura) [73](#).
 Mackloti (Dicaeum) [180](#).
 Macqueeni (Houbara) [224](#).
 Macrobrachium [305](#).
 Macrochlamys [147](#).
 macrodon (Rana) [257](#).
 Macrorhamphus [230](#).
 macrourus (Circus) [209](#).
 macrura (Sterna) [231](#).
 maculata (Tringa) [228](#).
 maculatus (Rallus) [274](#).
 maculipectus (Rhipidura) [70](#), [89](#).
 maculosus (Agraeus) [125](#).
 major (Dendrocopus) [205](#).
 " (Gallinago) [227](#).
 " (Lanius) [197](#).
 " (Parus) [194](#).
 " (Puffinus) [235](#).
 malayana (Benhamia) [328](#).
 " (Camaria) [56](#).
 mandhorensis (Perichaeta) [325](#).
 Mareca [217](#).
 marginalis (Limnobaenus) [270](#).
 " (Porzana) [270](#).
 marginicollis (Artactes) [29](#).
 marila (Fuligula) [219](#).
 marina (Pelagodroma) [184](#), [285](#).
 marinus (Larus) [233](#).
 Martensi (Pentadactylus) [104](#).
 " (Perichaeta) [324](#).
 mauritiana (Perichaeta) [322](#).
 Martini (Helix) [152](#).
 " (Macrochlamys) [149](#).
 martinicus (Porphyrio) [124](#).
 martius (Picus) [205](#).
 maruetta (Porzana) [223](#).
 Mauritia [123](#).
 medius (Dendrocopus) [206](#).
 melaleuca (Sauloprocta) [98](#).

- melancholicus (Tyrannus) [120](#).
 Melania [154](#).
 melanocephala (Emberiza) [201](#).
 melanocephalus (Larus) [184](#), [233](#).
 Melanocorypha [205](#).
 melanogaster (Cinclus) [193](#).
 melanolaema (Rhipidura) [68](#), [76](#).
 melanoleuca (Rhipidura) [72](#), [98](#).
 melanope (Motacilla) [195](#).
 melanops (Stoparola) [169](#).
 Melanoxanthus [126](#).
 melanurum (Compsosoma) [254](#).
 melba (Cypselus) [205](#).
 Meles [102](#).
 Melizophilus [191](#).
 Mellivora [99](#), [264](#).
 merganser (Mergus) [221](#).
 mergens (Grimmia) [265](#).
 Mergulus [238](#).
 Mergus [221](#).
 meridionalis (Pachycephala) [168](#).
 " (Stoparola) [170](#).
 Merops [206](#).
 Merula [107](#).
 " (Turdus) [189](#).
 mesomaelana (Homoeorhipis) [18](#).
 mesomelas (Vulpes) [263](#).
 metallescens (Encyalesthus) [27](#).
 metallicus (Agonischius) [127](#).
 Meyeri (Rhipidura) [113](#).
 migrans (Milvus) [211](#).
 migratorius (Ectopistes) [222](#).
 Mila [166](#).
 miliacea (Helix) [150](#).
 miliaria (Emberiza) [201](#).
 milium (Kaliella) [150](#).
 Milvus [210](#).
 minima (Perichaeta) [323](#).
 minor (Dendrocopus) [206](#).
 " (Lanius) [197](#).
 minuta (Ardetta) [213](#).
 " (Tringa) [228](#).
 minutilla (Tringa) [228](#).
 minutus (Anser) [184](#), [216](#).
 " (Larus) [233](#).
 miotympanum (Gonyocephalus) [251](#).
 Modiglianii (Perichaeta) [325](#).
 modularis (Accentor) [193](#).
 mollissima (Somateria) [220](#).
 Molossus [280](#).
 Molothrus [118](#).
 moluccana (Amaurornis) [270](#).
 monedula (Corvus) [204](#).
 montanus (Passer) [200](#).
 Monticola [189](#).
 montifringilla (Fringilla) [200](#).
 morinellus (Eudromias) [226](#).
 Morula [103](#).
 mossambicus (Petrolisthes) [293](#).
 Motacilla [195](#).
 multicolor (Eucyrtus) [40](#).
 multifasciata (Mabuia) [252](#).
 Muscicapa [188](#), [198](#).
 musica (Perichaeta) [320](#), [328](#).
 musicus (Cygnus) [217](#).
 " (Turdus) [188](#).
 mutus (Lagopus) [222](#).
 Myiozetetes [119](#).

 N.
 naevia (Aquila) [210](#).
 " (Locustella) [193](#).
 Nanina [148](#).
 Natalus [279](#).
 nebulosa (Rhipidura) [67](#), [73](#).
 Necrobioides [28](#).
 Necrophorus [161](#).
 Neocrex [270](#).
 neoguineensis (Perichaeta) [325](#).
 neomidinus (Eucyrtus) [47](#).
 Neomyias [66](#).
 Neophron [208](#).
 Neritaea [157](#).
 Neritina [157](#).
 nigra (Ciconia) [214](#).
 " (Hydrochelidon) [232](#).
 " (Oedemia) [220](#).
 nigricans (Limnopardalus) [267](#).
 " (Vespertilio) [279](#).
 nigricapilla (Motacilla) [196](#).
 nigricollis (Podiceps) [237](#).
 nigritarsis (Artactes) [31](#).
 nigritorquis (Rhipidura) [71](#), [97](#).
 nigrosignatus (Melanoxanthus) [126](#).
 nisoria (Sylvia) [191](#).
 nisus (Accipiter) [210](#).
 nitida (Avicennia) [122](#).
 nitidiuscula (Helix) [151](#).
 nivalis (Plectrophanes) [203](#).
 nivea (Glenae) [6](#).
 niveus (Poteriophorus) [246](#).

Noctilio [280](#).
 Noctua [163](#).
 noctua (Athene) [208](#).
 Noropsis [165](#).
 notata (Helota) [138](#).
 novaræ (Perichaeta) [323](#).
 Nucifraga [203](#).
 Numenius [230](#).
 Nyctala [208](#).
 Nyctea [208](#).
 Nycticorax [213](#).
 Nyctobates [25](#).
 nympa (Glenea) [12](#).
 Nyroca [219](#).

O.

Oberthüri (Glenea) [2](#).
 „ (Helota) [140](#).
 obiensis (Rhipidura) [71](#), [95](#).
 oblongulus (Eucyrtus) [43](#).
 obscurus (Anthus) [196](#).
 „ (Molossus) [280](#).
 „ (Puffinus) [235](#).
 obsoletus (Rhyparus) [145](#).
 oceanicus (Oceanites) [235](#).
 Oceanites [235](#).
 ochropus (Helodromas) [229](#).
 octolineatus (Simotes) [254](#).
 Ocydromus [268](#).
 Ocypode [284](#), [286](#).
 Oedemia [220](#).
 Oedemiridae [64](#).
 Oedienemus [224](#).
 oenanthe (Saxicola) [189](#).
 oenas (Columba) [221](#).
 Oestrelata [184](#), [235](#).
 olivaceum (Lygosoma) [252](#).
 olor (Cygnus) [187](#), [217](#).
 Omphalotropis [157](#).
 opaculus (Cleomis) [55](#).
 operculata (Perichaeta) [321](#).
 Ophidia [252](#).
 opisterythra (Rhipidura) [68](#), [76](#).
 orientale (Goniosoma) [284](#), [286](#).
 ornata (Japalura) [251](#).
 ornatus (Palaemon) [304](#).
 orphea (Pachycephala) [167](#).
 orphia (Sylvia) [191](#).
 Oriolus [197](#).
 Ostinops [117](#).

ostralegus (Haematopus) [226](#).
 Otis [224](#).
 Otocorys [205](#).
 Otocryptis [251](#).
 otus (Asio) [207](#).
 oxycephalum (Gonyosoma) [255](#).
 Oxyopiasthen [240](#).
 oxytropis (Helicina) [157](#).

P.

Pachycephala [167](#).
 Pachyteria [13](#).
 Pagophila [232](#).
 Palaemon [284](#), [303](#).
 pallens (Turdus) [188](#).
 palmarum (Tanagra) [117](#).
 Paludina [155](#).
 palumbarius (Astur) [210](#).
 palumbus (Columba) [221](#).
 palustris (Acrocephalus) [192](#).
 „ (Parus) [194](#).
 Pandion [212](#).
 Panurus [193](#).
 papua (Cyrena) [159](#).
 paradoxus (Syrrhaptes) [187](#), [222](#).
 pardalis (Rhacophorus) [257](#).
 pardalota (Dendroornis) [120](#).
 parasiticus (Stercorarius) [234](#).
 pareparensis (Caridina) [302](#).
 Parthenope (Glenea) [2](#).
 Parus [194](#).
 parva (Muscicapa) [188](#), [198](#).
 „ (Porzana) [223](#).
 parvulus (Troglodytes) [195](#).
 Passer [199](#).
 Passeres [188](#), [238](#), [239](#).
 Pasteuri (Helota) [111](#), [160](#).
 „ (Pachyteria) [16](#).
 „ (Prosopocoelus) [128](#).
 Pastor [203](#).
 Paykulli (Limnobaenus) [269](#).
 pectoralis (Rhipidura) [66](#), [71](#), [97](#).
 Pediotragus [265](#).
 pelagica (Procellaria) [234](#).
 Pelagodroma [184](#), [235](#).
 pellucidum (Leptopoma) [156](#).
 Pelzelni (Rhipidura) [67](#), [72](#).
 penelope (Anas) [187](#).
 „ (Mareca) [217](#).
 Pennula [269](#).

- Pentadactylus [103](#).
 peregrinus (Falco) [211](#).
 perlata (Rhipidura) [70](#), [91](#).
 perenopterus (Neophron) [208](#).
 Perdix [222](#).
 Perichaeta [316](#).
 Pernis [211](#).
 perplexa (Chrysobothris) [177](#).
 personata (Rhipidura) [68](#), [76](#).
 perspicillata (Oedemia) [220](#).
 Petrolisthes [284](#), [288](#).
 petronia (Passer) [200](#).
 petrosa (Caccabis) [222](#).
 phacopus (Numenius) [230](#).
 Phacochoerus [265](#).
 Phalacrocorax [212](#).
 Phalaropus [227](#).
 Phasianus [222](#).
 philadelphia (Larus) [184](#), [233](#).
 phoenicura (Rhipidura) [68](#), [76](#).
 phoenicurus (Ruticilla) [190](#).
 phragmitis (Acrocephalus) [193](#).
 Phratora [43](#).
 Phylloscopus [188](#), [192](#).
 Phyllostoma [281](#).
 Pica [204](#).
 Picariae [205](#), [238](#), [239](#).
 piceiventris (Catapiestus) [29](#).
 picescens (Holamara) [23](#).
 piceus (Catapiestus) [28](#).
 picicornis (Eucyrtus) [46](#).
 " (Uloma) [24](#).
 picta (Glenea) [1](#), [12](#).
 picticollis (Pseudeumolpus) [48](#).
 pictus (Dendrophis) [255](#).
 " (Psammodynastes) [255](#).
 pictum (Dolium) [276](#).
 Picus [205](#).
 pilaris (Turdus) [188](#).
 pilipes (Eucyrtus) [39](#).
 pilosa (Helix) [147](#), [150](#).
 Pinicola [201](#).
 Pitangus [112](#).
 pityopsittacus (Loxia) [201](#).
 placidulus (Palaemon) [284](#), [305](#).
 planirostris (Artibeus) [281](#).
 " (Molossus) [280](#).
 Planispira [160](#).
 planissimus (Leiolophus) [284](#), [297](#).
 planorbis (Trochomorpha) [150](#).
 Platalia [214](#).
 Platycrepis [34](#).
 Platyopisthen [242](#).
 platyrhyncha (Limicola) [228](#).
 Plectrophanes [203](#).
 Plegadis [215](#).
 plicosus (Cyclotus) [156](#).
 pluvialis (Charadrius) [225](#).
 Podiceps [236](#).
 polychroma (Pachyteria) [14](#).
 polychromus (Pseudeumolpus) [49](#).
 Polytela [165](#).
 pomatorhinus (Stereorarius) [234](#).
 pomeranus (Lanius) [197](#).
 Pontoscolex [328](#).
 Porcellana [296](#).
 Porphyrio [124](#).
 Porzana [223](#), [269](#), [270](#).
 posthuma (Perichaeta) [318](#).
 Poteriophorus [244](#), [246](#).
 Prakkei (Calamaria) [252](#).
 prasinus (Dryophis) [255](#).
 pratensis (Anthus) [196](#).
 " (Crex) [223](#).
 Pratincola [190](#).
 pratincola (Glareola) [224](#).
 Preissi (Rhipidura) [67](#), [72](#).
 pretiosus (Eucyrtus) [38](#).
 princeps (Trygaeus) [248](#).
 Procellaria [234](#).
 Prosopocoelus [128](#).
 protensus (Eucyrtus) [44](#).
 Pryeri (Pachyteria) [13](#).
 Psammodynastes [255](#).
 Pseudeumolpus [47](#).
 Pseudogerygone [258](#).
 Pseudonautes [52](#).
 puella (Dipsas) [255](#).
 Puffinus [235](#).
 pugnax (Machetes) [229](#).
 pulchra (Corethrura) [269](#).
 " (Perichaeta) [323](#).
 pulchridorsis (Amarygmus) [57](#).
 pulligera (Neritina) [157](#).
 pumilio (Rhinophylla) [281](#).
 puncticollis (Pachyteria) [13](#).
 puniceus (Atropos) [257](#).
 Purpura [103](#).
 purpurea (Ardea) [213](#).
 purpureotinctus (Eucyrtus) [38](#).
 purpuricollis (Pseudeumolpus) [48](#).
 purpurinus (Eucyrtus) [36](#).

pusilla (Emberiza) [202](#).
 „ (Helota) [140](#).
 „ (Porzana) [269](#).
 pustulata (Helota) [133](#), [140](#), [160](#).
 Pygopodes [236](#), [238](#), [239](#).
 Pyrrhocorax [203](#).
 Pyrrhula [201](#).
 Pythia [153](#).
 Python [252](#).

Q.

quadragenaria (Perichaeta) [323](#).
 quadrivittatus (Artibeus) [281](#).
 Querquedula [218](#).
 Quiscalus [118](#).

R.

racemosa (Perichaeta) [323](#).
 radians (Apatela) [163](#).
 „ (Noctua) [163](#).
 Raffrayi (Pseudeumolpus) [50](#).
 Raii (Motacilla) [196](#).
 Rallidae [266](#).
 Rallina [269](#).
 ralloides (Ardea) [213](#).
 Rallus [223](#), [266](#), [274](#).
 Rana [257](#).
 ratel (Mellivora) [100](#), [264](#).
 Ratelus [102](#), [263](#).
 Recurvirostra [226](#).
 Regulus [191](#).
 Remipes [284](#), [288](#).
 reticulatus (Python) [252](#).
 Rhacophorus [257](#).
 Rhinophylla [281](#).
 Rhipidoceridae [18](#).
 Rhipidura [65](#), [113](#).
 rhynchops (Cerberus) [255](#).
 Rhyparus [17](#), [144](#).
 Richardi (Anthus) [196](#).
 Ricinula [104](#).
 ridibundus (Larus) [233](#).
 riparia (Cotile) [198](#).
 Rissa [232](#).
 rosea (Acridula) [194](#).
 roseipes (Anser) [216](#).
 Rosenbergi (Rhipidura) [70](#), [88](#).
 roseus (Pastor) [203](#).
 Rosthramus [121](#).

rotundicollis (Pseudeumolpus) [50](#).
 rubecula (Erithacus) [190](#).
 rubetra (Pratincola) [190](#).
 rubicola (Pratincola) [190](#).
 rufa (Caccabis) [222](#).
 „ (Rhipidura) [81](#).
 rufescens (Linota) [200](#).
 „ (Petroliastes) [290](#).
 „ (Tryngites) [229](#).
 ruficollis (Bernicla) [217](#).
 „ (Caprimulgus) [205](#).
 „ (Pachyteria) [13](#).
 „ (Turdus) [189](#).
 rufidorsa (Rhipidura) [69](#), [80](#).
 rufifrons (Rhipidura) [69](#), [78](#).
 rufilabris (Uloma) [23](#).
 rufilateralis (Rhipidura) [68](#), [75](#).
 rufina (Columba) [123](#).
 „ (Fuligula) [219](#).
 rufipes (Stenophida) [129](#).
 rufiventris (Rhipidura) [71](#), [96](#).
 rufofasciata (Ceropria) [22](#).
 rufofemoratum (Oxyopisthen) [241](#).
 rufofrontata (Rhipidura) [69](#), [78](#).
 rufus (Desmodus) [282](#).
 „ (Phylloscopus) [192](#).
 rugosicollis (Pachyteria) [13](#).
 rugosus (Coenobita) [284](#), [300](#).
 russata (Rhipidura) [69](#), [78](#).
 rustica (Emberiza) [202](#).
 „ (Hirundo) [198](#).
 „ (Pica) [204](#).
 rusticola (Scolopax) [227](#).
 Ruticilla [190](#).
 rutilans (Artactes) [32](#).
 rutilicuspis (Chrysobothris) [177](#).

S.

Sabinii (Xema) [233](#).
 Saccopteryx [280](#).
 Salvadori (Gerygone) [175](#).
 sandakanensis (Bothrops) [256](#).
 sandwichensis (Pennula) [269](#).
 sanguinans (Amarygmus) [60](#).
 sanguineus (Leptodius) [285](#).
 sangirensis (Perichaeta) [317](#).
 sanguinolentus (Limnopardalus) [267](#).
 sanguinicus (Nyctobates) [25](#).
 suturale (Platyopisthen) [242](#).
 saturata (Hypotaenidia) [268](#).

- saturata (Rhipidura) [72](#).
 Sauloprocta [66](#), [98](#).
 saxatilis (Monticola) [189](#).
 Saxicola [184](#), [189](#).
 scandiaca (Nyctea) [208](#).
 Scarabaeide [17](#), [144](#).
 scarabaeus (Pythia) [153](#).
 Schlegeli (Merula) [107](#), [109](#).
 schoeniclus (Emberiza) [202](#).
 Schomburgki (Porzana) [270](#).
 Schwaneri (Cryptolopha) [260](#).
 " (Scincus) [252](#).
 Scincus [252](#).
 Sciurus [265](#).
 Scolopax [227](#).
 " (Oedienemus) [224](#).
 Scops [208](#).
 scorpionoides (Thalassina) [314](#).
 scoticus (Lagopus) [222](#).
 sculpticollis (Ananca) [64](#).
 scyllarus (Gonodactylus) [284](#), [310](#).
 Seebohmi (Merula) [109](#).
 " (Turdus) [109](#).
 segetum (Anser) [216](#).
 sellatus (Poteriophorus) [246](#).
 semiarmatus (Pseudeumolpus) [51](#).
 semicollaris (Rhipidura) [69](#), [78](#).
 semicyanea (Gauromaia) [83](#).
 semipunctatus (Eucyrtus) [42](#).
 semisulcata (Pythia) [153](#).
 semirubra (Rhipidura) [69](#), [78](#).
 Septaria [158](#).
 septentrionalis (Colymbus) [236](#).
 " (Stoparola) [169](#).
 Serinus [199](#).
 serratipennis (Helota) [134](#).
 serrator (Mergus) [221](#).
 Sesarma [284](#), [287](#).
 setosa (Rhipidura) [71](#), [94](#), [96](#).
 Severini (Helota) [138](#), [140](#), [160](#).
 Sharpei (Rhipidura) [72](#).
 " (Stictolimnas) [274](#).
 siamensis (Apatetica) [248](#).
 siberica (Melanocorypha) [205](#).
 sibilatrix (Phylloscopus) [192](#).
 sibiricus (Turdus) [189](#).
 siderea (Ricinula) [104](#).
 Simianus [18](#).
 similis (Glenea) [8](#).
 " (Pachyteria) [13](#).
 simillimus (Catapiestus) [28](#).
 Simotes [254](#).
 simulator (Pseudeumolpus) [47](#).
 Sitta [195](#).
 smaragdinum (Lygosoma) [252](#).
 Smithi (Pentadactylus) [103](#).
 sociabilis (Rostramus) [121](#).
 Somateria [220](#).
 soricina (Glossophaga) [281](#).
 sparverinus (Tinnunculus) [184](#).
 sparverius (Tinnunculus) [184](#), [212](#).
 Spatula [218](#).
 speciosa (Pachyteria) [13](#).
 spectabilis (Amarygmus) [58](#).
 " (Camaria) [57](#).
 " (Somateria) [220](#).
 spectrum (Vampyrus) [281](#).
 spilodera (Rhipidura) [67](#), [73](#).
 Spilota [171](#).
 spinus (Chrysomitris) [199](#).
 spipoletta (Anthus) [196](#).
 splendens (Eucyrtus) [37](#).
 splendidum (Dicaeum) [180](#).
 squamata (Rhipidura) [68](#), [76](#).
 Squatarola [225](#).
 stapazina (Saxicola) [189](#).
 Staphylinidae [248](#).
 Steganopodes [212](#), [238](#), [239](#).
 stellaris (Botaurus) [214](#).
 Stelleri (Heliconetta) [220](#).
 Stenophida [129](#).
 Stenothyra [155](#).
 Stercorarius [234](#).
 Sterna [231](#).
 Stictolimnas [274](#).
 Stimpsonii (Thalamita) [285](#).
 stolidus (Anous) [232](#).
 Stoparola [169](#).
 stramineus (Natalus) [279](#).
 Strauchi (Testudo) [312](#).
 streperus (Acrocephalus) [192](#).
 " (Chaulelasmus) [218](#).
 Strepsilas [226](#).
 striata (Hypotaenidia) [267](#).
 " (Lomaptera) [143](#).
 " (Pythia) [154](#).
 " (Tringa) [228](#).
 Striges [207](#), [238](#), [239](#).
 striola (Bidessus) [105](#).
 Strix [207](#).
 Strongylium [60](#).
 Strubelli (Nanina) [149](#).

Sturnus [203](#).
 suahalensis (Crex) [270](#).
 subarquata (Tringa) [228](#).
 subbuteo (Falco) [212](#).
 subcostatus (Eucyrtus) [44](#).
 sublaevicollis (Bradymerus) [21](#).
 submetallicus (Agonischius) [127](#).
 suborbicularis (Septaria) [158](#).
 subvittatus (Eucyrtus) [38](#).
 suecica (Cyanecula) [190](#).
 Sula [212](#).
 sulcaticollis (Necrobioides) [28](#).
 sulphuratus (Pitangus) [119](#).
 sulphurea (Gerygone) [174](#).
 sulfureiventer (Pachycephala) [167](#).
 sumatrensis (Rhyparus) [17](#), [145](#).
 sumbawensis (Rhipidura) [70](#), [84](#).
 superciliosus (Phylloscopus) [188](#), [192](#).
 Surnia [208](#).
 suturalis (Helicina) [157](#).
 Swinderianus (Anlacodus) [265](#).
 sylvatica (Turnix) [223](#).
 Sylvia [191](#).
 Symallaxis [120](#).
 Syrniium [207](#).
 Syrrhaptes [187](#), [222](#).

T.

tabuensis (Porzana) [269](#).
 Tachybaptus [237](#).
 Tadorna [217](#).
 Tanagra [116](#).
 taprobanae (Perichaeta) [323](#).
 tarda (Otis) [224](#).
 tarsalis (Prosopocoelus) [128](#).
 taurina (Catoblepas) [182](#).
 Temminckii (Tringa) [228](#).
 Temminckii (Calamaria) [252](#).
 Tenebrionidae [19](#).
 tenebrosa (Rhipidura) [70](#), [90](#).
 Tengmalmi (Nyctala) [208](#).
 Tenkatei (Perichaeta) [321](#).
 " (Petrolisthes) [284](#), [289](#).
 " (Rhipidura) [70](#), [91](#).
 tenuipes (Strongylium) [63](#).
 tenuirostris (Numenius) [231](#).
 Testudo [312](#).
 Tetrao [223](#).
 tetrax (Otis) [224](#).
 tetrax (Tetrao) [223](#).

Teysmanni (Cinnyris) [179](#).
 " (Pachycephalus) [167](#).
 " (Rhipidura) [69](#), [80](#).
 Thalamita [284](#), [285](#).
 Thalassina [314](#).
 Thaumastopeus [141](#).
 thenothorax (Rhipidura) [70](#), [86](#).
 thetis (Glenea) [12](#).
 tibialis (Helota) [136](#), [140](#), [160](#).
 timorensis (Caridina) [284](#), [300](#).
 tigrina (Rana) [257](#).
 Tinnunculus [184](#), [212](#).
 Tirouri (Melania) [154](#).
 titys (Ruticilla) [190](#).
 tjibodae (Perichaeta) [326](#).
 Todirostrum [119](#).
 torda (Alca) [237](#).
 torquata (Oestrelata) [184](#), [235](#).
 torquatus (Turdus) [189](#).
 torquilla (Lynx) [206](#).
 Totanus [229](#).
 tragulus (Pediocarpus) [265](#).
 transversicollis (Eucyrtus) [27](#).
 trapezicollis (Eucyrtus) [36](#).
 trianguligerus (Tropidonotus) [255](#).
 tricolor (Melanoxanthus) [126](#).
 " (Rhipidura) [98](#).
 tricuspis (Gnaphaloryx) [128](#).
 tridactyla (Rissa) [232](#).
 Tringa [228](#).
 Tringoides [229](#).
 trivialis (Anthus) [196](#).
 trochilus (Phylloscopus) [192](#).
 Trochomorpha [150](#).
 Troglodytes [116](#), [195](#).
 troile (Lomvia) [237](#).
 Tropidonotus [255](#).
 truncata (Uloma) [24](#).
 truncaticeps (Eucyrtus) [40](#).
 truncatipenne (Strongylium) [60](#).
 Trygacus [248](#).
 Tryngites [229](#).
 tuberculiger (Amarygmus) [59](#).
 Tubinares [234](#), [238](#), [239](#).
 Turdinus [261](#).
 turdoides (Acrocephalus) [192](#).
 Turdus [107](#), [188](#).
 Turnix [223](#).
 Turtur [221](#).
 typus (Caridina) [284](#), [300](#).
 Tyrannus [120](#).

U.

Uloma [23](#).
 ulula (Surnia) [208](#).
 undatus (Melizophilus) [191](#).
 unguiculastra (Helix) [147](#), [150](#).
 ungulina (Helix) [150](#).
 unilobatus (Petrolisthes) [289](#).
 Upupa [207](#).
 uraniae (Rhipidura) [69](#), [76](#).
 urbica (Chelidon) [128](#).
 urecolata (Perichaeta) [322](#).
 Uria [237](#).
 urogallus (Tetrao) [223](#).

V.

vagevittatus (Pseudonautes) [52](#).
 Vampyrus [281](#).
 Vandepolli (Helota) [111](#).
 " (Poteriophorus) [246](#).
 Vanellus [226](#).
 variicolor (Amarygmus) [59](#).
 variabilis (Perichaeta) [319](#).
 variegatum (Dolium) [277](#).
 varius (Turdus) [188](#).
 Varuna [284](#), [286](#).
 ventralis (Helota) [160](#).
 ventricosa (Stenothyra) [155](#).
 Verreauxi (Rhipidura) [67](#), [73](#).
 versicolor (Rhipidura) [69](#), [78](#).
 Vespertilio [279](#).
 vespertinus (Tinnunculus) [212](#).
 Venus [158](#).
 venus (Glenea) [2](#), [12](#).
 vidua (Rhipidura) [71](#), [74](#), [94](#).
 villosum (Strongylium) [62](#).
 violaceipes (Cleomis) [54](#).
 viridis (Gecinus) [206](#).

viscivorus (Turdus) [188](#).
 vitiensis (Perichaeta) [323](#).
 vitreum (Leptopoma) [155](#).
 vittatum (Lygosoma) [252](#).
 vittulatus (Eucyrtus) [45](#).
 vocifera (Aegialitis) [226](#).
 voluptuosa (Glenea) [12](#).
 Vordermanni (Cryptolopha) [260](#).
 " (Perichaeta) [325](#).
 vulgaris (Buteo) [209](#).
 " (Coccothraustes) [199](#).
 " (Sturnus) [203](#).
 " (Vanellus) [226](#).
 Vulpes [263](#).

W.

Weberi (Caridina) [301](#).
 " (Sesarma) [288](#).
 Westermanni (Oxyopisthen) [240](#).
 Westwoodi (Thaumastopeus) [141](#).
 Wolfi (Cyanecula) [190](#).
 Wyckii (Caridina) [284](#), [302](#).

X.

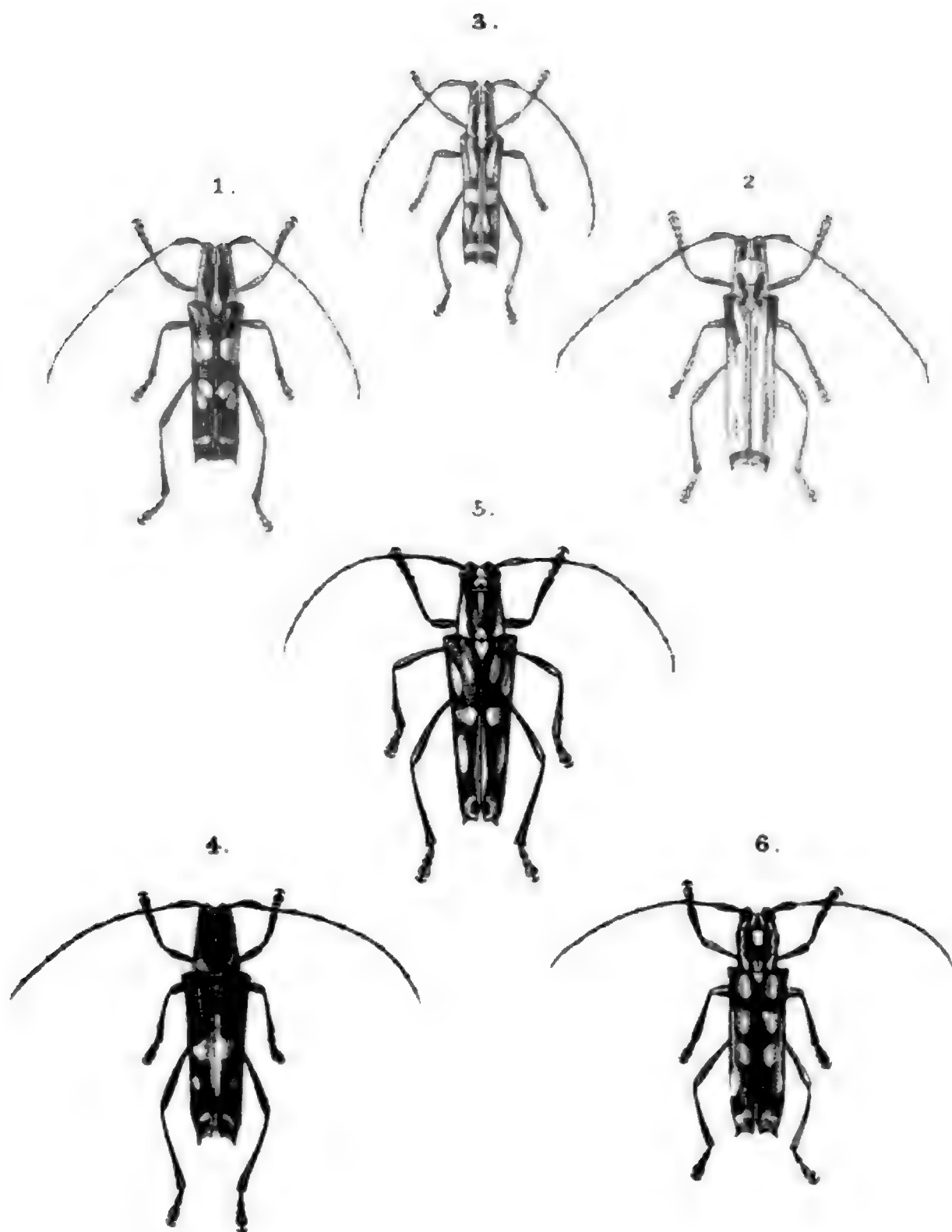
Xanthosomus [118](#).
 Xema [233](#).
 Xesta [148](#).

Y.

Youngii (Desmodus) [282](#).

Z.

Zenobia (Cyrtostomus) [180](#).
 zonaria (Helix) [147](#), [150](#).



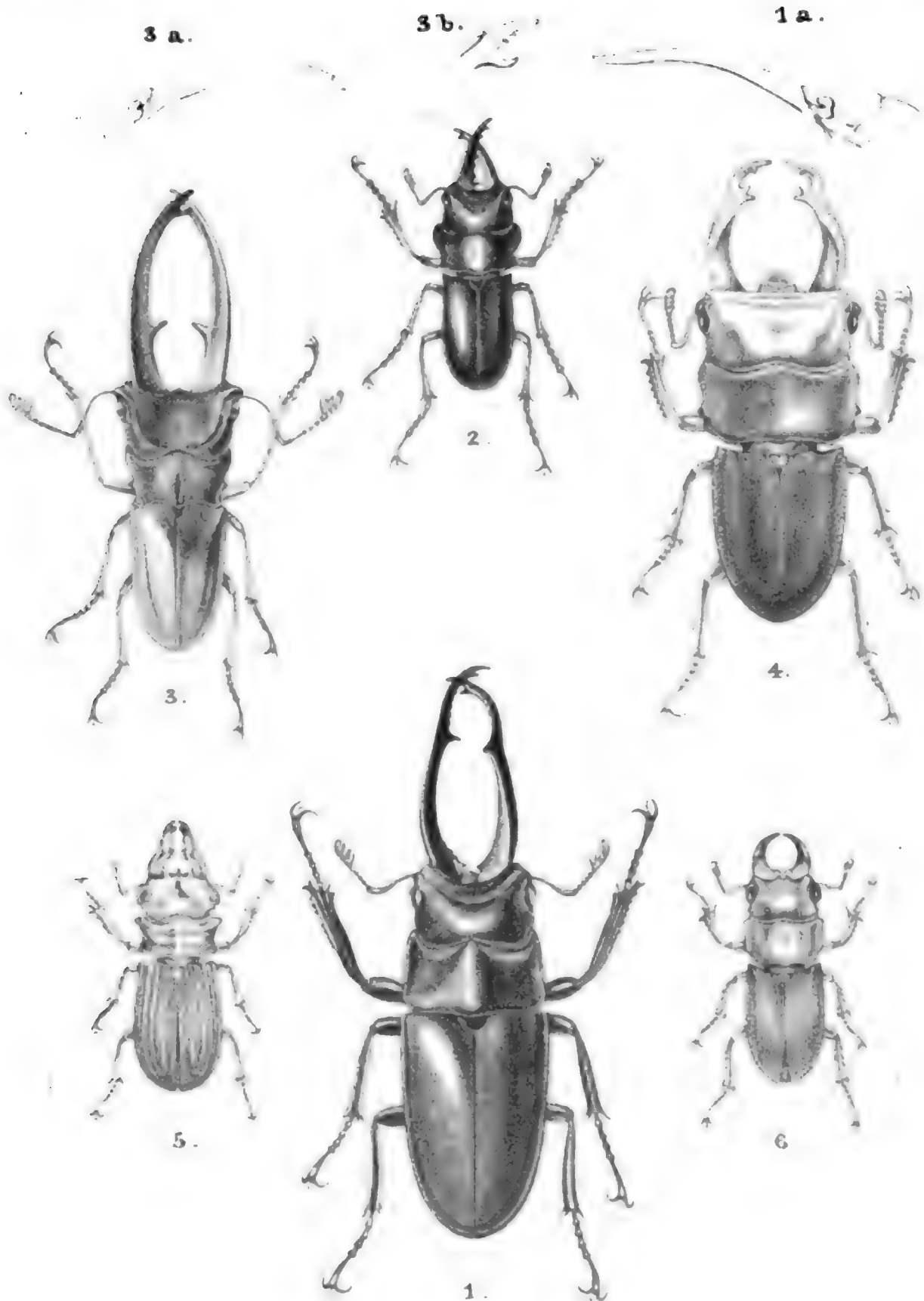
W. F. Jacobs del.

Dr. H. W. de Graaf lith.

P. W. M. Trap impr.

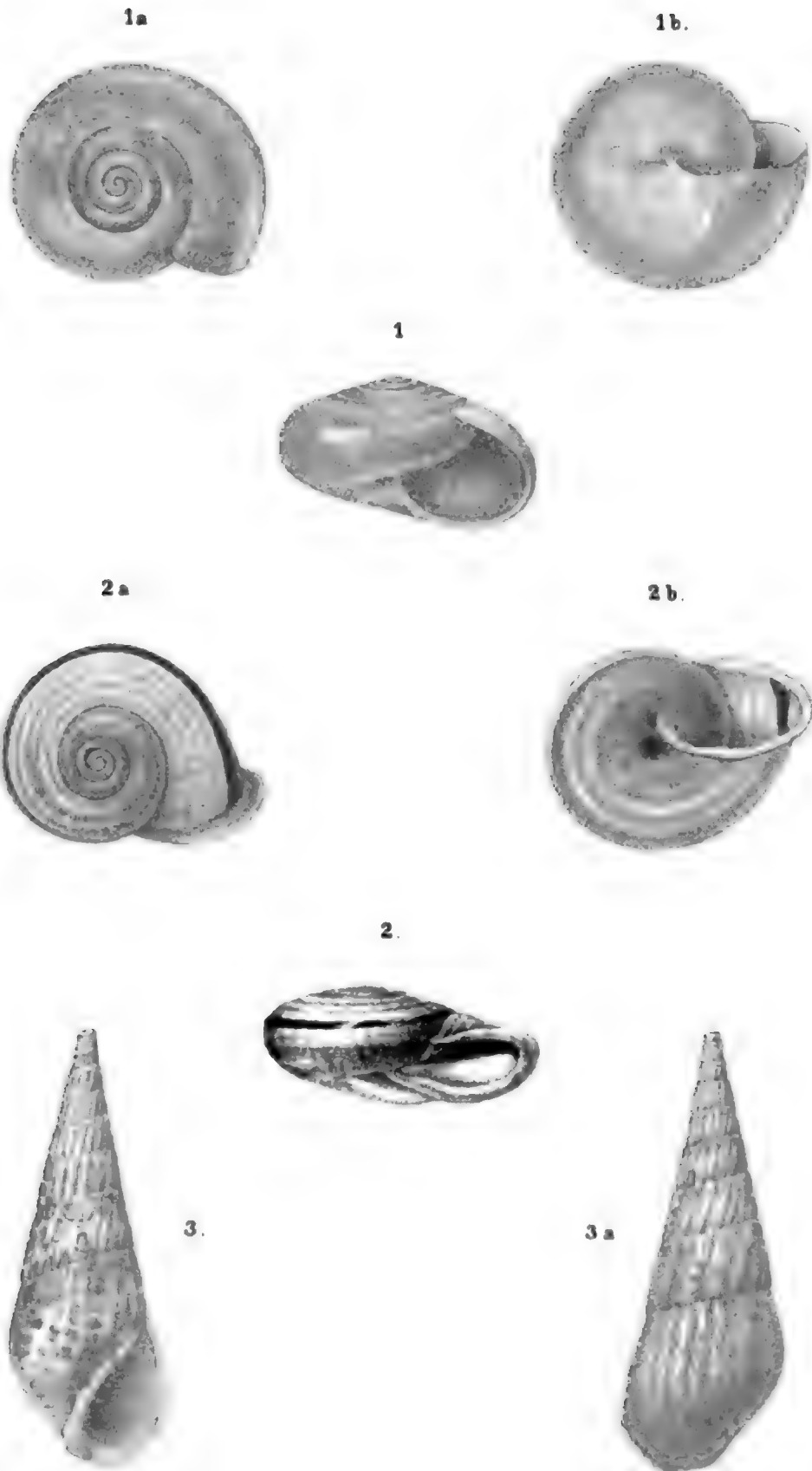
1. *Glenea bisbiguttata* Rits.
2. „ *nivea* Rits.
3. „ *similis* Rits.

4. *Glenea Hasselti* Rits.
5. „ *florensis* Rits.
6. „ *Oberthuri* Rits.



1, 2, 3. W. F. Jacobs
4, 5, 6. Dr. H. W. de Graaf } del. Dr. H. W. de Graaf lith. P. W. M. Trap impr.

- | | |
|-------------------------------------------|----------------------------------------|
| 1. <i>Prosopocoelus Pasteuri</i> Rits. | 4. <i>Eurytrachelus Hansteini</i> Alb. |
| 2. " <i>tarsalis</i> Rits. | 5. <i>Gnaphaloryx tricuspis</i> Rits. |
| 3. <i>Cyclommatus canaliculatus</i> Rits. | 6. <i>Aegus Leeuweni</i> Rits. |



Dr. H. W. de Graaf del.

P. W. M. Trap impr.

1. *Macrochlamys Martini* Schepm. 2. *Helix zonaria*, var. *Martini* Schepm.
3. *Melania clavus* Lam.















NOTES
FROM THE
LEYDEN MUSEUM.

1

2

3

4

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7

NOTES
FROM THE
LEYDEN MUSEUM

FOUNDED BY THE LATE

Prof. H. SCHLEGEL,

CONTINUED BY

Dr. F. A. JENTINK,

Director of the Museum.

VOL. XVI.

LEYDEN
E. J. BRILL.
1895.

CONTENTS OF VOL. XVI.

MAMMALIA.

	Page
On <i>Bubalus mindorensis</i> Heude. By Dr. F. A. Jentink. (Plates 8—11). . .	199.
On <i>Trichys fasciculata</i> (Shaw). By Dr. F. A. Jentink.	205.
On a specimen of <i>Herpestes semitorquatus</i> Gray from Sumatra. By Dr. F. A. Jentink.	210.
On the Rhinoceroses from the East-Indian-Archipelago. By Dr. F. A. Jentink .	231.
On <i>Potamogale velox</i> du Chaillu. By Dr. F. A. Jentink	234.

AVES.

On two new Birds of Paradise. By J. Büttikofer.	161.
On the immature dress of <i>Microglossus aterrimus</i> . By J. Büttikofer. . . .	166.

REPTILIA.

Reptiles from Timor and the neighbouring islands. By Dr. Th. W. van Lidth de Jeude	119.
<i>Thalassochelys caretta</i> on the Dutch coast. By Dr. Th. W. van Lidth de Jeude.	211.
On a collection of Reptiles from Transvaal. By Dr. Th. W. van Lidth de Jeude.	227.

PISCES.

Die Fische Liberia's. Beschrieben von Dr. Fr. Steindachner. (Tafel 1—4). .	1.
Remarks on the genus <i>Orthragoriscus</i> . By Dr. C. L. Reuven. (Plate 5). .	128.
A new <i>Novacula</i> -species from the Balabalongan- or Little Paternoster isles. By Dr. C. L. Reuven.	131.
Fresh- and brackish water Fishes from Sumba, Flores, Groot-Bastaard, Timor, Samaoe and Rotti. By Dr. C. L. Reuven	145.
Fishes from the Brantas-river, Java. By Dr. C. L. Reuven	173.

INSECTA.

Coleoptera.

	Page
Two new species of the genus <i>Helota</i> , from Burma. By C. Ritsema Cz.	97.
A new species of the Longicorn genus <i>Zonopterus</i> . By C. Ritsema Cz.	107.
On <i>Cyclommatus squamosus</i> Rits. By C. Ritsema Cz.	110.
On a collection of <i>Helotidae</i> from Kurseong. By C. Ritsema Cz.	111.
Two new species of exotic Longicorn Beetles. Described by C. Ritsema Cz.	157.
Second supplementary list of the described species of the Longicorn genera <i>Zonopterus</i> , <i>Pachyteria</i> and <i>Aphrodisium</i> . By C. Ritsema Cz.	168.
A new Curculionid of the genus <i>Ommatolampus</i> . Described by Dr. K. M. Heller.	169.
On some new Brenthidæ from Java and Sumatra. By Dr. Angelo Senna.	179.
Description de trois espèces d'Elatérides nouveaux du Musée de Leyde. Par E. Candèze.	197.
Descriptions of some new Brenthidæ. By Dr. Angelo Senna.	213.

MOLLUSCA.

A new <i>Potamides</i> . By M. M. Schepman. (Plate 6).	133.
On the habitat of <i>Nanina inquinata</i> v. d. Busch. By M. M. Schepman.	136.

VERMES.

Descriptions of Earthworms. By Dr. R. Horst. VIII. On a large Earthworm from Borneo. (Plate 7)	137.
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Vol. XVI was issued in parts in the following order:

Nº. 1 and 2 — April 1894, Note I—V.

Nº. 3 and 4 — March 1895, Note VI—XXVII.

NOTE I.

DIE FISCHE LIBERIA'S

VON

Dr. F. STEINDACHNER.

Die zoologischen Untersuchungen des Herrn Büttikofer und seiner Gefährten Sala und Stampfli in dem westafrikanischen Neger-Freistaate Liberia, welche in verschiedenen Jahrgängen der »Notes'' zur Behandlung gekommen sind, haben auch auf ichthyologischem Gebiete interessante Ergebnisse geliefert, welche ich in der nachfolgenden Abhandlung zusammenzustellen versuche.

Einige Süßwasserfische aus dem St. Paulsflusse, worunter drei neue Arten, wurden schon im Jahrgang 1881 der »Notes'' von Hubrecht beschrieben. Eine Karte der bereisten Gebiete hat Büttikofer im Jahrgang 1888 dieser Zeitschrift publicirt, sowie in seinem Werke »Reisebilder aus Liberia'', in welchem auch zahlreiche, sehr interessante biologische Beobachtungen über liberianische Fische mitgetheilt werden.

Percidae.1. *Serranus aeneus* Is. Geoffr.

4 Exemplare, $12\frac{1}{2}$ —15.7 Centim. lang, von Grand Cape Mount.

Kopflänge $3\frac{3}{5}$ — $2\frac{1}{2}$ mal, Leibeshöhe $3\frac{1}{2}$ — $3\frac{1}{4}$ mal in der Körperlänge, Auge fast 5— $5\frac{1}{3}$ mal, Schnauzenlänge

Notes from the Leyden Museum, Vol. XVI.

etwas mehr als $4\frac{1}{3}$ mal in der Kopflänge enthalten, 3 ziemlich grosse Stacheln am Vordeckelwinkel.

Die Seitenlinie durchbohrt bei dem kleinsten Exemplare c. 74, bei dem grössten 83—84 Schuppen. 93—101 Schuppen liegen längs dem oberen Rande der Seitenlinie.

Caudale oval gerundet, hell gerandet. 2—3 helle Streifen ziehen vom hinteren Rande des Auges radienförmig nach hinten. Rumpf mit schrägen, dunklen Querbinden und noch dunkleren Flecken. — D. $11\frac{1}{15-16}$ A. $\frac{3}{2}$.

2. *Lutjanus caxis* sp. Bl. Schn.

Lutjanus guineensis Blkr., Mém. sur les Poiss. de la Côte de Guinée, Haarlem, 1863, pag. 46, Tab. X, fig. 1.

5 Exemplare, 5.3—9.5 und 18.1 Cent. lang. Fundorte: Junk-fluss, Grande Cape Mount und Robertsport.

Zahnbinde am Vomer nagelförmig, mit langem Stiele. Kopflinie kaum bogenförmig gekrümmt, Schnauze zugespitzt.

Die grösste Rumpfhöhe ist $2\frac{3}{5}$ — $2\frac{2}{3}$ mal, die Kopflänge $2\frac{2}{5}$ mal in der Körperlänge, der Augendiameter mehr als $3\frac{2}{3}$ - nahezu 4 mal, die Breite der knöchernen Stirne 6—7 mal, die Schnauzenlänge etwas mehr als 3 — $2\frac{1}{3}$ mal in der Kopflänge enthalten.

Das hintere Ende des Oberkiefers fällt unter den vorderen Augenrand. Vorne im Zwischenkiefer 4 Hundszähne, die beiden mittleren derselben viel kleiner als die äusseren. Am Unterkiefer vorne zu jeder Seite 3—4 Hackenzähne in der Aussenreihe, viel kleiner als die gegenüber liegenden Fangzähne des Zwischenkiefers.

Zahnbinde längs der Mitte der Zunge gestreckt oval.

Neun schlanke, stabförmige Rechenzähne am Aussenrande des ersten Kiemenbogens, vom untersten ersten bis zum achten an Länge zunehmend; der oberste 9te, welcher bereits an dem oberen Kiemenbogenaste liegt, bedeutend kürzer als der vorangehende. 7 Schuppenreihen auf den Wangen.

Notes from the Leyden Museum, Vol. XVI.

Hinterer Raud des Vordeckels nach vorne und unten geneigt. Vordeckelwinkel grösser als ein rechter, an der Spitze gerundet; über demselben eine seichte Einbuchtung zur Aufnahme einer kleinen knopfförmigen Anschwellung am oberen vorderen Ende des Zwischendeckels.

2^{ter} Analstachel länger als der 3^{te} und zugleich viel stärker als jeder der Dorsalstacheln; bei einem Exemplare von 8.4 Cent. Länge ist er zugleich ein wenig länger als der 5^{te} höchste Dorsalstachel, bei dem grössten von c. 18 Cent. Länge ebenso lang wie dieser und c. $2\frac{1}{3}$ mal in der Kopflänge enthalten.

Die über der Seitenlinie gelegenen Schuppenreihen steigen nur wenig nach hinten und oben gegen die Basis der Dorsale an, und zwar am bedeutendsten noch in dem zwischen der Seitenlinie und dem gliederstrahligen Theile der Dorsale gelegenen Raume.

An dieser Stelle liegen unter den vorderen Gliederstrahlen 5, hinter diesen 4 Schuppenreihen.

Die Seitenlinie durchbohrt 46—47 Schuppen am Rumpfe. Ebenso viele Querschuppenreihen liegen längs dem oberen Rande derselben.

Eine blaue Linie zieht von der Seite der Schnauze, unter dem Auge vorüber, zum hintersten Ende des Kiemendeckels.

Jede Schuppe der grösseren unteren Rumpfhälfte mit einem hellen silberglänzenden Flecke im mittleren Theile.

D. $\frac{10}{13}$. A. $\frac{3}{3-9}$. L. l. 46—47. L. tr. 6— $7\frac{1}{13-14}$.

3. *Lutjanus eutactus* Blkr.

Lutjanus eutactus Blkr., l. c. p. 51, Tab. XI. fig. 2 (1863).

Genyorange canina Steind., Ichthyol. Notizen, IX., Sitzb. d. kais. Akad. d. Wissensch. Wien, I. Abth. Bd. 60, p. 16 im Separatabd. (1869).

Lutjanus cubera Poey, Ann. Lyc. Natur. Hist. New-York 1871; Jordan & Swain, Review of the Spec. of Lutjaninae etc., Proceed. of U. St. National Museum, Vol. VII. N°. 28, p. 442 (1884).


2 Exemplare, 15,4 u. 17 Cent. lang, aus dem Junkflusse.

Notes from the Leyden Museum, Vol. XVI.

Bei diesen jungen Individuen ist die Kopflänge c. $2\frac{2}{3}$ — $2\frac{3}{5}$ mal, die Leibeshöhe $2\frac{1}{5}$ mal in der Körperlänge, die Breite der knöchernen Stirne $7\frac{1}{5}$ — $7\frac{3}{5}$ mal, die Schnauzenlänge 3 mal, die Länge der Pectorale $1\frac{1}{3}$ mal, die der Ventrals $1\frac{3}{5}$ — $1\frac{3}{4}$ mal in der Kopflänge enthalten.

Das hintere Ende des Oberkiefers fällt in vertikaler Richtung in der Mitte zwischen Augencentrum und vorderen Augenrand.

9 Schuppenreihen auf den Wangen; 8 stabförmige, sehr schlanke Rechenzähne am Aussenrande des ersten Kiemenbogens in dessen unterem Aste, von dem ersten sehr zarten und kurzen Zahne gegen den obersten letzten rasch an Länge zunehmend.

Zahnbinde am Vomer offen  förmig. Zahnbinde auf der Zunge lang, sehr schmal. 2 Hundszähne jederseits vorne im Zwischen- wie im Unterkiefer; die äusseren im Zwischenkiefer viel länger als die beiden mittleren und bedeutend länger als die entsprechenden im Unterkiefer, der auch an den Seiten mehrere längere Zähne trägt.

Eine sehr seichte Einbuchtung am aufsteigenden, äusserst fein gezähnten Vordeckelrande; eine deutlich entwickelte knopfförmige Anschwellung am oberen vorderen Ende des Zwischendeckels: Winkel am Vordeckel flach gerundet, etwas grösser als ein rechter.

Der 3^{te} Analstachel ist schlanker, etwas länger oder nur ebenso lang wie der 2^{te} Analstachel und kürzer als der höchste 4. und 5. Dorsalstachel, deren jeder etwas weniger als 3 mal in der Kopflänge enthalten ist.

Caudale am hinteren Rande schwach concav.

Die zwischen der Seitenlinie und der Basis der ganzen Dorsale gelegenen Schuppen bilden sehr schräge, nach oben und hinten ansteigende Reihen. Die Seitenlinie ist schwach gebogen, durchbohrt c. 46—50 Schuppen am Rumpfe und c. 12—13 auf der Caudale. 60—61 Querschuppenreihen liegen längs dem oberen Rande der Seitenlinie.

Rumpf dunkelbraun, besonders im obersten Theil intensiv tief braun gefärbt, heller gegen den Bauchrand zu. Brust-


gehend silbergrau, ebenso die Bauchseite. Schuppen im Centrum stets heller als gegen den Rand zu. Bei dem kleineren Exemplare sind in der oberen Rumpfhälfte schmale helle Querbinden angedeutet.

4. *Lutjanus agennes* Blkr.

Lutjanus agennes Blkr. l. c. pag. 49, Tab. IX. fig. 1.

6 junge Exemplare, 5—12 Cent. lang, von Grand Cape Mount und Robertsport.

Die Kopflänge ist durchschnittlich $2\frac{1}{2}$ mal, die grösste Leibeshöhe $2\frac{1}{5}$ — $2\frac{5}{6}$ mal in der Körperlänge (oder c. $3\frac{1}{3}$ mal in der Totallänge) enthalten, der Augendiameter $3\frac{1}{4}$ — $3\frac{2}{3}$ mal, die Stirnbreite etwas mehr als $6\frac{2}{3}$ mal, die Schnauzenlänge unbedeutend mehr als 3 mal in der Körperlänge.

Das hintere Ende des Oberkiefers fällt unter die Augenmitte. Jederseits 2 Hundszähne vorne im Zwischenkiefer, der äussere derselben viel stärker entwickelt als der innere. An den Seiten des Unterkiefers sind die 3 letzten Zähne der Aussenreihe am stärksten entwickelt und etwas grösser als die 6 Hackenzähne (3 jederseits) der äusseren Zahnreihe im vorderen Theile des Unterkiefers nächst der Symphyse. Zahubinde am Vomer  förmig, ohne stielförmigen Fortsatz; längs der Mitte der Zunge eine ziemlich lange, schmale Zahubinde, die nach hinten zugespitzt endigt.

Präorbitale fasst 2 mal so lang wie hoch; die Höhe desselben ist c. $1\frac{3}{4}$ mal in der Augenlänge enthalten. 6—7 Schuppenreihen auf den Wangen.

Hinterer Rand des Vordeckels zart gezähnt, unbedeutend nach hinten und unten geneigt mit einer seichten Einbuchtung über dem hinteren Winkel, der nur wenig grösser als ein rechter und an der Spitze gerundet ist. Die Zähne am Vordeckelwinkel grösser als die am hinteren Rand desselben Knochens. Der knopfförmige Vorsprung am oberen vorderen Ende des Zwischendeckels nur sehr

schwach angedeutet. Acht schlanke Rechenzähne an der Aussenseite des unteren Astes des ersten Kiemenbogens, die gegen den letzten obersten gleichmässig an Länge zunehmen.

Der 2^{te} Analstachel ist etwas länger als der 3^{te} Analstachel und ein wenig stärker und kürzer als der 5^{te} höchste Dorsalstachel, der $\frac{2}{3}$ einer Kopflänge erreicht. Pektoriale zugespitzt, $1\frac{1}{4}$ mal in der Kopflänge enthalten. Der erste, fadenförmig verlängerte Gliederstrahl der Ventrals reicht mit seiner Spitze bis zur Analgrube und ist etwas mehr als $1\frac{1}{4}$ mal in der Kopflänge enthalten. 5 vollkommen horizontal gelagerte Schuppenreihen zwischen der Seitenlinie und der Basis des stacheligen Theiles der Rückenflosse und 4 Reihen zwischen ersterer und der Basis der gegliederten Dorsalstrahlen.

Keine blaue Längslinie an den Seiten des Kopfes unter dem Auge. Ein silberglänzender Querstreif oder etwas grösserer Querflack auf jeder Schuppe der oberen Rumpfhälfte, die Ränder derselben Schuppen breit braun eingefasst. Weiter die Rumpfsseiten hinab wird der braune Schuppensaum allmählig heller und schmaler. Die 3—4 untersten seitlichen Schuppenreihen des Rumpfes sind gleich den Schuppen der ganzen Brustgegend und der Bauchseite hell silberweiss.

D. $\frac{10}{14}$. A. $\frac{3}{9}$. L. tr. $5\frac{1}{12-13}$. L. l. 46.

5. *Diagramma crassispinum* Rüpp.

Diagramma affine Gthr., Catal. I. p. 319.

2 Exemplare, $23\frac{1}{4}$ und $27\frac{1}{2}$ Cent. lang, von Grand Cape Mount.

Die grösste Rumpfhöhe mit Einschluss der Schuppenscheide längs der Basis des stacheligen Theiles der Dorsale ist ein wenig mehr als 2- etwas mehr als $2\frac{1}{3}$ mal, die Kopflänge $3\frac{1}{4}$ - ein wenig mehr als $3\frac{1}{7}$ mal in der Körperlänge, der Augendiameter $3\frac{1}{4}$ — $3\frac{2}{5}$ mal, die Stirnbreite $3\frac{1}{3}$ — $3\frac{2}{5}$ mal, die Schnauzenlänge mehr als $2\frac{2}{3}$ - etwas weniger als 3 mal, der 5^{te} höchste Dor-

Notes from the Leyden Museum, Vol. XVI.

salstachel $1\frac{3}{7}$ — $1\frac{3}{5}$ mal in der Kopflänge enthalten.

Die obere Profillinie des Kopfes und die Nackenlinie erheben sich unter bogenförmiger Krümmung ziemlich rasch zur Dorsale. Lippen wulstig. Dorsal- und Analstachel sehr kräftig.

Die Seitenlinie durchbohrt 48 Schuppen am Rumpfe, längs dem oberen Rande der Seitenlinie 55—57 Querreihen von Schuppen.

Bei dem kleineren Exemplare ist der ganze Rumpf mit runden dunkelbraunen Flecken gleichmässig besetzt; bei dem grösseren Exemplare liegen kleinere silbergraue glänzende Flecken in geringer Zahl am Kopfe, auf dem Rumpfe und den Gliederstrahlen der Dorsale und überdies noch zahlreiche kleine braune Flecken, welche aber nicht sehr deutlich hervortreten, da die Grundfarbe des Körpers bei diesem Exemplare kupferbraun, bei dem kleineren dagegen silbergrau (mit einem Stich ins Bräunliche) ist. Bei einem dritten, nur 8.7 Cent. langen Exemplare von der Westküste Afrika's, welches mir von Herrn Rath F. Müller in Basel zur Bestimmung eingesendet wurde, ist die Caudale in den beiden hinteren Längendritteln, der gliederstrahlige Theil der Dorsale in der oberen kleineren Höhenhälfte und das untere Randstück der gegliederten Analstrahlen gelblichweiss. Der Körper selbst ist zum grössten Theile bräunlichgrau und ungefleckt, nächst der Caudale ziemlich dunkelgrauviolett. Ebenso violett gefärbt ist auch der basale Theil der Caudale und zugleich scharf abgegrenzt gegen den hell gefärbten, weisslichen Theil der Flosse, ferner die Anale mit Ausschluss des hellfärbigen Randstückes, die grössere untere Höhenhälfte der gegliederten Dorsalstrahlen und die ganze Ventrals.

Ein ähnlich gefärbtes, junges Exemplar erwähnt auch F. Day in »The Fishes of India'', pag. 78.

D. $1\frac{1}{16}$. A. $\frac{3}{7}$ —8.

6. *Pristipoma Jubelini* C. V.

Pristipoma Jubelini C. V., Hist. nat. Poissons, t. V. pag. 250 ,

Notes from the Leyden Museum, Vol. XVI.

Steind., zur Fischf. des Senegal, Sitzb. Wien. Akad., I. Abth. Bd. 60 Nov. Heft. 1869, pag. 7 des Separ. Abdr. Taf. 2.

3 Exemplare, 14.1—21.5 Cent. lang, aus dem Messurado-Flusse, von Buluma und Cape Mount-See.

Leibeshöhe $3-2\frac{6}{7}$ mal (bei dem grösst. Ex.), Kopflänge $2\frac{5}{6}-2\frac{1}{5}$ mal in der Körperlänge, Schnauze $3\frac{1}{4}-3$ mal, Auge $3\frac{1}{4}-3\frac{3}{5}$ mal (bei dem grösst. Ex.), Länge des 2^t Analstachels etwas weniger als $1\frac{1}{2}$ - genau $1\frac{1}{2}$ mal, Länge der Pectorale 1 mal in der Kopflänge enthalten.

Bei den 2 kleineren Exemplaren ist der 3^{te}, bei dem grössten der 4^t Dorsalstachel am höchsten und bei ersteren $1\frac{3}{5}$ - mehr als $1\frac{4}{5}$ mal, bei letzterem $1\frac{2}{3}$ mal in der Kopflänge enthalten. Der 2^{te} Analstachel, der stärkste aller Flossenstacheln ist bedeutend länger als der 3^t Analstachel und überragt mit seiner Spitze den freien Rand der übrigen Analstrahlen nach unten.

D. $11\frac{1}{15}-10$. A. $\frac{3}{8}-9$. L. l. 52—53 (+ 14 auf der Caud.) L. tr. $6-7\frac{1}{14}-15$.

7. *Pristipoma suillum* C. V.

Pristipoma suillum C. V. IX, p. 482, Steind. l. c. pag. 14, Taf. 5.

3 kleine Exemplare, $10\frac{1}{2}-12\frac{1}{2}$ Cent. lang.

Körperform gestreckt, von geringer Höhe, comprimirt. Kopf zugespitzt.

Die obere Profillinie des Kopfes erhebt sich zugleich mit der Nackenlinie nur mässig bis zur Dorsale und ist von der Schnauzenspitze bis zum Beginn der Hinterhauptsgegend kaum, an letzterer schwach gebogen.

Die Kopflänge ist $2\frac{1}{5}-2\frac{5}{6}$ mal, die grösste Rumpfhöhe etwas mehr als $3\frac{1}{4}-3\frac{1}{5}$ mal in der Körperlänge, der Augendiameter 3- etwas mehr als 3 mal, der knöcherne Theil der Stirne 6 mal, die Schnauzenlänge 3 mal, die Länge der zugespitzten Pectorale $1\frac{1}{5}-1\frac{1}{4}$ mal, die der Ventrale am ersten, schwach fadenförmig verlängerten Gliederstrahle $1\frac{2}{3}-1\frac{1}{2}$ mal, der 4. höchste Stachel der stacheligen Dorsale durchschnittlich 2 mal, der 2^t Anal-

stachel genau oder etwas weniger als 2 mal in der Kopflänge enthalten. Die geringste Leibeshöhe am Schwanzstiel übertrifft ein wenig $\frac{1}{3}$ der grössten Rumpfhöhe.

Das hintere Endstück des Oberkiefers ragt bei geschlossenem Munde nur wenig über den unteren Rand des grossen Präorbitale vor und fällt mit dem hinteren Rande vertikal zwischen die beiden Narinen.

Der hintere Rand des Vordeckels ist concav und stärker gezähnt als der untere. Vordeckelwinkel gerundet. 10—11 Schuppenreihen liegen zwischen dem unteren Augenrande und dem Rande des Vordeckelwinkels.

Die Stacheln der 1. Dorsale nehmen bis zum 3^{ten} rasch an Höhe zu; der 3^{te} ist nur wenig kürzer als der 4^{te} höchste Stachel. Die folgenden Stacheln nehmen bis zum 11^{ten} allmählig, gleichmässig an Höhe ab; der 12^{te} Stachel, d. i. der erste Stachel 2^{ten} Dorsale ist länger als der 11^{te}.

Der 2^{te} Stachel der Anale übertrifft den 3^{ten} bedeutend an Stärke doch nur sehr wenig an Länge und überragt mit seiner Spitze nicht den freien Rand der folgenden Gliederstrahlen.

Die Schuppenreihen über der Seitenlinie ziehen schräge nach oben und hinten, die übrigen aber horizontal hin. Auf jeder Schuppenreihe der oberen Rumpfhälfte liegt eine schmale graubraune Längsbinde. Zwei ziemlich breite, wässerig braune Längsbinden auf den Dorsalen, die untere nächst der Basis, die obere unter dem freien Rande der Flossen.

D. $11\frac{1}{15}$. A. $\frac{3}{9}$. L. l. 52—52 (+ c. 10—12 auf d. C.); L. tr. $6-7\frac{1}{14-15}$.

8. *Pristipoma macrophthalmum* Blkr.

Pristipoma macrophthalmus Blkr., l. c. p. 52, Tab. XII, fig. 1; Steind. l. c. p. 16.

2 Exemplare, 18.6 und 19.2 Cent. lang, von Grand Cape Mount.

Die grösste Leibeshöhe ist unbedeutend weniger als 3

Notes from the Leyden Museum, Vol. XVI.

mal, der Kopflänge $2\frac{5}{6}$ — $2\frac{3}{4}$ mal in der Körperlänge, der Augendiameter $3\frac{1}{7}$ — etwas mehr als $3\frac{1}{4}$ mal, die mittlere Stirnbreite 4 — $4\frac{1}{4}$ mal, die Länge der Schnauze c. 4 mal in der Kopflänge enthalten.

Die Mundspalte erhebt sich ziemlich rasch nach vorne und die Kiefer reichen gleich weit nach vorne. Im Zwischenkiefer liegen 3 Reihen von Zähnen, im Unterkiefer nur in vorderen Theile 3, seitlich eine Zahnreihe. Die Kieferzähnen sind spitz, die der Aussenreihe länger als die übrigen.

Das hintere Ende des Oberkiefers fällt vertikal unter die Augenmitte.

Die ziemlich breite Stirne ist querüber gewölbt, die Hinterhauptsgegend längs der Mittellinie schneidig, die Schnauze fällt ein wenig steiler nach vorne ab, als der übrige Theil der Kopflinie zum Beginn der Dorsale sich erhebt.

Der hintere Rand des Vordeckels ist concav, nach hinten und unten geneigt, der Vordeckelwinkel gerundet. Unterer und hinterer Vordeckelrand zart gezähnt. 10 Schuppenreihen auf den Wangen zwischen dem unteren Augenrande und dem Rande des Vordeckelwinkels. Bei dem einen Exemplare ist der 3^{te}, bei dem anderen der 4^{te} Dorsalstachel am höchsten und mehr als $1\frac{2}{3}$ — $1\frac{6}{7}$ mal, die Länge der Pectorale c. $1\frac{1}{6}$ — $1\frac{1}{7}$ mal, die der Ventrals c. $1\frac{1}{2}$ — $1\frac{3}{5}$ mal in der Kopflänge enthalten.

Der 2^{te} Analstachel ist bedeutend stärker aber nur sehr wenig länger als der 3^{te} und dieser ebenso lang oder nur wenig kürzer als der folgende erste Gliederstrahl.

Die Länge des 2^{ten} Analstachels, von dessen unter Schuppen verborgen liegender Basis gemessen, ist c. $2\frac{2}{3}$ mal in der Kopflänge enthalten.

Ein grosser, intensiv brauner Fleck auf dem zwischen dem Einschnitte der beiden Deckelstacheln ausgespannten Hautlappen. Pectorale, Anale, 2^{te} Dorsale und das unterste Höhenviertel der stacheligen Dorsale grünlichgelb, Rest der 1^{ten} Dorsale wässerig grünlichbraun. Ein kleines

Notes from the Leyden Museum, Vol. XVI.

tiefbraunes Fleckchen zunächst über der Basis der beiden Dorsalen vor jedem Flossenstrahl derselben. Hintere Hälfte der Brust-, und äusserer Theil der Bauchflossen, die ganze Anale und gliederstrahlige Dorsale sehr zart braun punktiert.

D. $11\frac{1}{13}$. A. $\frac{3}{9}$. L. l. 46—48 (+ 6—7 auf der C.).
L. tr. $5\frac{1}{2}\frac{1}{11}$.

9. *Smaris melanurus* C. V.

Ein Exemplar, $26\frac{1}{2}$ Cent. lang, von Robertsport.

Leibeshöhe $2\frac{1}{2}$ mal, Kopflänge mehr als $3\frac{1}{4}$ mal, Länge der zugespitzten Pektoreale ein wenig mehr als 3 mal, Länge des oberen Caudallappens c. $2\frac{1}{3}$ mal in der Körperlänge, Augendiameter c. $3\frac{3}{5}$ mal, Schnauzenlänge $3\frac{1}{4}$ mal, Stirnbreite ein wenig mehr als 3 mal in der Kopflänge enthalten.

3 Schuppenreihen unter dem Auge bis zur Randleiste des Vordeckels, 3 und weiter nach oben 2 vertikale Schuppenreihen zwischen der hinteren Randleiste und dem aufsteigenden Rande des Vordeckels. Der hintere Rand des letzteren ist ein wenig nach hinten und unten geneigt, der Vordeckelwinkel ein rechter und stark gerundet.

Der Zwischenkiefer überragt nach vorne kaum den Unterkiefer. Das hintere Ende des Oberkiefers, der bei geschlossenem Munde bis auf einen schmalen Streif am hinteren Endstück von dem Präorbitale überdeckt wird, fällt in vertikaler Richtung unbedeutend vor das Auge. Kieferzähne kurz, in mehreren Reihen.

Obere Profillinie des Kopfes zwischen dem vorderen Schnauzenende und dem Beginne der Hinterhauptsgegend concav.

Der höchste, 6te, zarte Dorsalstachel ist ein wenig länger als die Hälfte des Kopfes. Die Spitze der horizontal zurückgelegten Pektoreale fällt vertikal über den Beginn der Anale. Venträle c. halb so lang wie die Brustflosse.

Notes from the Leyden Museum, Vol. XVI.

Hinterseite der Pektoralbasis tiefbraun. Der grosse bräunliche Fleck am Schwanzstiele ist nicht scharf abgegrenzt.

D. $12\frac{1}{15}$. A. $3\frac{1}{16}$. L. l. 74. L. tr. $8\frac{1}{12}$.

Gerridae.

10. *Gerres melanopterus* Blkr.

7 Exemplare, 4.9—15.5 Cent. lang, aus dem St. Paul- und Cape Mount-Flusse.

Nur bei dem grössten Exemplare ist die Rumpfhöhe $2\frac{2}{3}$ mal, bei Exemplaren von 10—14 $\frac{1}{2}$ Cent. Länge 3 mal, bei den kleinsten Individuen von 10—14 $\frac{1}{2}$ Cent. Länge $3\frac{1}{3}$ — $3\frac{2}{5}$ mal, die Kopflänge bei den kleineren Exemplaren etwas mehr als 3 mal, bei den grösseren durchschnittlich $3\frac{1}{3}$ mal in der Körperlänge, die Augendiameter bei ersteren c. $2\frac{3}{5}$ — $2\frac{2}{3}$ mal, bei letzteren c. 3 mal, die Stirnbreite fasst $3\frac{1}{2}$ - fasst $3\frac{1}{4}$ mal, die Schnauzenlänge c. $3\frac{2}{5}$ - nahezu $3\frac{1}{2}$ mal in der Kopflänge enthalten. Die Stirngrube ist gestreckt oval, der Vordeckelwinkel ein rechter mit abgerundeter Spitze und am Rande äusserst zart gezähnt; doch verliert sich die Zähnelung bei älteren Individuen nicht selten. Die grössere, mittlere Breite der Stirngrube ist nahezu 4—4 $\frac{1}{3}$ mal (bei grösseren Exemplaren) in der Stirnbreite enthalten. 3 Längsschuppenreihen auf den Wangen. Die Pectorale gleicht an Länge dem Kopfe. L. lat. 44—46 (bis z. C.).

Ein grosser, intensiv schwarzbrauner Fleck liegt im oberen Theile der stacheligen Dorsale zwischen dem 2.—6. Stachel, sie ist nach unten (bei wohl erhaltenen Individuen) scharf abgegrenzt und 3 mal oval ausgezackt. Bei den grösseren Exemplaren laufen in der Regel schmale, nicht scharf abgegrenzte, dunkle Querbinden über die Seiten des Rumpfes herab.

Dr. Horst wies in einer Abhandlung über die westafrikanischen Gerres-Arten (Notes from the Leyden Mu-

Notes from the Leyden Museum, Vol. XVI.

seum, Vol. V. p. 28—30) nach, dass *Gerres octactis* Blkr. mit *G. Nigri* Gthr., nicht aber mit *G. melanopterus* Blkr. identisch sei, wie ich früher annahm (s. Steind., Fische des Senegal II., Sitzb. Wien. Akad. Bd. 60, Dezemb. Heft 1869). *Gerres Nigri* Gthr. kommt nach Dr. Horst in Liberia (Coll. Büttikofer) vor, mir selbst wurde kein Exemplar zur Ansicht und Bestimmung eingesendet.

Sparidae.

11. *Dentex maroccanus* C. V.

Ein Exemplar, 22.6 Cent. lang, von Robertsport.

Leibeshöhe $2\frac{1}{2}$ mal, Kopflänge c. $2\frac{1}{3}$ mal, Länge der säbelförmig gebogenen Pectorale c. 3 mal in der Körperlänge, Augendiameter $3\frac{2}{7}$ mal, Schnauzenlänge etwas weniger als 3 mal, Stirnbreite $4\frac{1}{2}$ mal in der Kopflänge enthalten.

Abfall der Schnauze zum vorderen Mundrand fast geradlinig; obere Profillinie des Kopfes und Nackenlinie von der Längenmitte der Stirne bis zum Beginn der Dorsale bogenförmig gekrümmt.

2 Hundszähne jederseits vorne im Zwischen- und 3 im Unterkiefer. Unmittelbar hinter diesen zahlreiche Reihen spitzer Zähne, die Zähne in den vordersten Reihen grösser als die nach hinten folgenden. An den Seiten der Kiefer liegen in der Aussenreihe schlanke conische Zähne mit etwas abgestumpfter Spitze, und zwar im Zwischenkiefer merklich längere als im Unterkiefer; hinter dieser äusseren seitlichen Zahnreihe folgen im Zwischenkiefer 2—3 Reihen im Unterkiefer eine Reihe sehr kurzer, stark abgestumpfter konischer Zähnchen.

Die Mundwinkel fallen in vertikaler Richtung vor die Augenmitte. Das Präorbitale ist vorne am höchsten; seine grösste Höhe ist c. $1\frac{3}{5}$ mal in der Länge des Knochens enthalten. 6 schräge Schuppenreihen auf den Wangen bis zur Vorleiste des Vordeckelwinkels und 3 zwischen dem

hinteren Augenrande und der Vorleiste des hinteren Randes des Vordeckels. Überdies liegen vorne 1, weiter zurück 2—3 Schuppenreihen zwischen der Vorleiste und dem unteren Rande des Präopercels. Der platte, dreieckige Vorsprung des Deckels läuft in eine zarte stachelartige Spitze aus.

Der 5. und 6. höchste Dorsalstachel ist $2\frac{1}{3}$ mal, der 2te stärkste Analstachel c. $2\frac{2}{3}$ mal in der Kopflänge enthalten.

Bei dem mir zur Untersuchung vorliegenden Exemplare fehlt der grösste Theil der Rumpfschuppen, die Zahl der Schuppen längs der Seitenlinie dürfte c. 45—46 betragen haben.

Vulgärname: Snapper.

D. $1\frac{1}{10}$. A. $\frac{3}{4}$. P. 14.

Squamipinnes.

12. *Ephippus goreensis* C. V.

Ein Exemplar, 23.8 Cent. lang von Grand Cape Mount:

Es erhebt sich bei demselben die Kopflinie von der Stirne an sammt der Nackenlinie viel rascher und unter stärkerer Bogenkrümmung zur Dorsale als es die Abbildung in Cur. Valenc. Werke (Tab. 178) zeigt. Die Stirne ist querüber stark gewölbt und springt ein wenig höckerförmig über den fast vertikal gestellten, schwach concaven Abfall der Schnauze vor.

Kopflänge etwas mehr als $3\frac{1}{2}$ mal, grösste Leibeshöhe mit Ausschluss der Schuppenscheide an der Basis der Dorsale c. $1\frac{7}{9}$ mal in der Körperlänge, Schnauzenlänge fast $2\frac{1}{2}$ mal, Stirnbreite mehr als $2\frac{3}{4}$ mal, Augendiameter ein wenig mehr als 3 mal in der Kopflänge enthalten.

Vordere, untere Narine sehr klein, punktförmig, obere Narine schlitzförmig, ziemlich hoch und schräge gestellt. Das hintere Ende des Oberkiefers fällt in vertikaler Rich-

tung unter den vorderen Augenrand. Kieferzähne dicht an einander gedrängt, pfriemenförmig, mit der Spitze nach innen gebogen, in mehreren Reihen; die Zähne der äusseren Reihe stets ein wenig länger als die der nächstfolgenden inneren Reihe und an der Spitze goldgelb.

Vordeckelränder äusserst zart gezähnt. Vordeckelwinkel ein rechter.

Der erste und die beiden letzten Stacheln der ersten Dorsale sehr kurz, der 2.—4^{te} stark verlängert. Die Höhe des 2^{ten} Stachels ist c. $2\frac{2}{3}$ mal, die des 3^{ten} etwas weniger als $2\frac{3}{4}$ mal, die des 4^{ten} mehr als $3\frac{1}{2}$ mal, die Höhe des 5^{ten} Stachels $6\frac{1}{4}$ mal in der Körperlänge enthalten.

Pektorale kurz, c. $1\frac{3}{5}$ mal in der Kopflänge. Die Ventrals ist etwas länger als der Kopf; der erste Gliederstrahl derselben, fadenförmig verlängert, erreicht mit seiner Spitze den Beginn der Anale.

Die Schuppen am Hinterhaupte, auf der Stirne und auf den Wangen sind sehr klein; etwas grösser sind die Schuppen der Kehlgegend und bedeutend grösser die am Kiemendeckel in 4 Querreihen gelegenen Schuppen. Vorderseite der Schnauze und die Lippen schuppenlos. 10 Schuppenreihen zwischen der Basis des ersten Dorsalstachels und dem Beginne der Seitenlinie in schräger Richtung, c. 7—8 Schuppen vertikal zur Seitenlinie herab (mit Ausschluss der 2 Schuppenreihen auf der Scheide der Dorsale) und 17 zwischen dem Beginn der Seitenlinie und der Insertionsstelle der Ventralen.

Vordere Längenhälfte der Pektorale und äussere Hälfte der Ventrals dunkel grauviolett.

P. $\frac{2}{11}$. D. $7\frac{1}{13}$ (19). A. $\frac{2}{15}$. L. l. c. 46—47.

13. *Drepane punctata* sp. L.

2 Exemplare, jedes c. $21\frac{1}{2}$ Cent. lang, 13.3 und 13.8 Cent. hoch von Grand Cape Mount.

Die sichelförmige Pektorale erreicht c. die Hälfte der

Notes from the Leyden Museum, Vol. XVI.

Totallänge, die Kopflänge ist $2\frac{6}{7}$ - unbedeutend mehr als 3 mal in der Körperlänge, der Augendiameter etwas mehr als 3 mal, die Höhe der Schnauze $2\frac{1}{3}$ — $2\frac{1}{2}$ mal, die Breite der stark gewölbten Stirne etwas mehr als $3\frac{1}{4}$ — $3\frac{1}{5}$ mal in der Kopflänge enthalten. Hinterer Rand des Vordeckels sehr hoch, ein wenig nach hinten und unten geneigt, nicht gezähnt. Vordeckelwinkel etwas kleiner als ein rechter, unterer Rand des Vordeckels gezähnt.

Die vordere Kopf- und die Nackenlinie erhebt sich rasch bis zur Basis des 3ten Dorsalstachels; erstere ist sowohl über als unten dem Auge, letztere vom Hinterhauptsende bis zur Dorsale mehr oder minder schwach concav.

Die Seitenlinie steigt anfänglich auf den 11—12 ersten Rumpfschuppenreihen sehr rasch, fast ohne bogenförmige Krümmung an und fällt dann allmählig auf den folgenden 29—30 Schuppenreihen gegen den Schwanzstiel ab; auf letzterem verläuft sie fast in horizontaler Richtung. Zwischen der Basis des 3. und 4. Dorsalstachels und dem höchsten Stande der Seitenlinie liegen 11—12, zwischen letzterem und der Einlenkungsstelle der Ventralen c. 32 Schuppen in einer Querreihe. Vierter Dorsalstachel am höchsten, erster äusserst klein. 7 dunkelgraue Querbinden am Rumpfe.

D. $\frac{9}{20}$ (21). A. $\frac{3}{13}$. L. l. 46. L. tr. 11—12 $\frac{1}{32}$.

Polynemidae.

14. *Galeoides polydactylus* sp. Vahl.

3 Exemplare, mit Ergänzung der theilweise beschädigten Caudale 6.5, 21.5 und 30.5 Centimeter lang, von Cape Mount und Robertsport, an letzterem Orte Butter-nose genannt.

Bei jedem der 3 Exemplare 9 Pectoralanhänge.

Grösste Rumpfhöhe bei den 2 grösseren Exemplaren etwas mehr als 3 — $3\frac{1}{2}$ mal in der Körperlänge enthalten

Notes from the Leyden Museum, Vol. XVI.

und der Kopflänge gleich. Die Länge des Auges ist bei dem kleinsten Exemplare 3 mal, bei dem nächst grösseren fast $3\frac{1}{3}$ mal, bei dem grössten nahezu 4 mal in der Kopflänge enthalten. Bei dem kleinsten Exemplare steht die Leibeshöhe der Kopflänge merklich nach; erstere ist fast $3\frac{1}{2}$ mal, letztere unbedeutend mehr als 3 mal in der Körperlänge enthalten.

P. 15. D. $8\frac{1}{13}$. A. $2\frac{1}{11}$. L. l. 46—47. L. tr. $5\frac{1}{11}$ bis z. V.

Sciaenidae.

15. *Otolithus senegalensis* C. V.

2 Exemplare, $29\frac{1}{2}$ und 30 Centimeter lang, von Grand Cape Mount.

Kopflänge c. $3\frac{3}{7}$ - mehr als $3\frac{1}{4}$ mal, Leibeshöhe fast $4\frac{1}{2}$ — $3\frac{1}{5}$ mal in der Körperlänge, Auge $5\frac{2}{3}$ —6 mal, Schwanzlänge $4\frac{1}{3}$ - fast $4\frac{1}{5}$ mal, Stirnbreite $5\frac{2}{3}$ —6 mal in der Kopflänge enthalten.

Das hintere Ende des Oberkiefers fällt in vertikaler Richtung ein wenig hinter das Auge. Das vordere Ende des Unterkiefers springt unbedeutend über den Zwischenkiefer vor. Die Länge der Mundspalte von der Kinnspitze bis zum hinteren Ende des Oberkiefers gemessen, ist c. $2\frac{1}{2}$ - fast $2\frac{3}{5}$ mal in der Kopflänge enthalten.

Pektorale kaum um eine halbe Augenlänge kürzer als der Kopf. Die höchsten Gliederstrahlen der Anale sind nahezu halb so lang wie der Kopf. Caudale rhombenförmig, die längsten mittleren Strahlen c. um eine Schnauzenlänge kürzer als der Kopf.

Hinterer Rand des Vordeckels geradlinig, stark nach hinten und unten geneigt; hinterer Vordeckelwinkel ein rechter, mit abgerundeter Spitze, unterer Rand des Vordeckels nach vorne und unten geneigt. Etwas grössere Zähne in der Winkelgegend des Präoperkels als am aufsteigenden Rande. Bedeutend längere und stärkere Zähne in der Aussenreihe am Zwischenkiefer als im Unterkiefer.

Rumpfschuppen bis zur Analgegend in schrägen Reihen nach hinten ansteigend, im letzten Drittel der Rumpflänge bilden sie nahezu horizontale Reihen. Der Richtung der Schuppenreihen folgen die schmalen dunkelgoldbraunen Rumpfbinden oder Streifen, die gegen den Bauchrand zu allmählig in ein helles Goldgelb übergehen. Ein stark verschwommener dunkelgrauer Fleck am Kiemendeckel.

D. $10\frac{1}{30-31}$. A. $\frac{2}{7}$. L. l. 52 (bis zur C.). L. tr. $6\frac{1}{11}$.

Acanthuridae.

16. *Acanthurus monroviae* Steind.

Acanthurus Monroviae Steind., Ichthyol. Beiträge (V), Sitzb. Wien. Akademie, I. Abth. Bd. 74, (Juli-Heft) 1876, pag. 160 (Separatabdruck).

Acanthurus phlebotomus Troschel (nec C. V.), Archiv für Naturgesch., 32^{er} Jahrg. Bd. 1 pag. 227.

2 Exemplare, $9\frac{1}{2}$ und 16.7 Cent. lang, von der Mündung des Messurado-Flusses und von Cape Mount.

Bei dem kleineren Exemplare ist der gelbe Ring um den Caudalstachel schwach angedeutet und schmal, bei dem grösseren deutlich entwickelt.

Kopflänge $3\frac{2}{5}$ - fast $3\frac{1}{3}$ mal, Leibeshöhe $2\frac{1}{5}$ - $2\frac{1}{11}$ mal in der Körperlänge, Auge mehr als $2\frac{1}{3}$ - mehr als $3\frac{3}{5}$ mal, Schnauzenlänge $1\frac{1}{9}$ mal in der Kopflänge enthalten.

14—16 Zähne im Ober-, 16—18 im Unterkiefer, blattförmig, nächst der Rändern goldbraun und fein ausgezackt. Der letzte, längste Dorsalstachel ist $1\frac{3}{5}$ - $1\frac{3}{4}$ mal in der Kopflänge enthalten. Hinterer Rand der Caudale bogenförmig eingeschnitten, hell gesäumt.

D. $\frac{9}{26}$. A. $\frac{3}{24}$.

Trichiuridae.

17. *Trichiurus lepturus* Lin.

Ein Exemplar, c. $45\frac{1}{2}$ Cent. lang, von Robertsport.

Notes from the Leyden Museum, Vol. XVI.

Kopflänge $6\frac{1}{2}$ Cent. Grösste Rumpfhöhe nahezu $2\frac{1}{3}$ mal, Augendiameter etwas mehr als $6\frac{1}{2}$ mal, Schnauzenlänge (bis zur Spitze des Unterkiefers gemessen) fast $2\frac{2}{3}$ mal, Stirnbreite $7\frac{2}{5}$ mal, Länge der Pectorale etwas mehr als $3\frac{1}{6}$ mal in der Kopflänge enthalten.

Stirne querüber flach; vom vorderen Ende des oberen Augenrandes zieht eine erhabene Leiste nach innen und hinten, und trifft am Hinterhaupte mit der der entgegengesetzten Kopfseite unter einem sehr spitzen Winkel zusammen.

Der Augendiameter ist ein wenig mehr als 2 mal in der Schnauzenlänge enthalten.

Psettidae.

18. *Psettus Sebae* C. V.

3 Exemplare aus der Brackwassergegend des Messurado-Flusses.

Totallänge derselben: 10.3, 11 und 15 Cent. Körperlänge (d. i. Totall. mit Ausschluss der Caudale): 7.9, 8.6, 11.5 Cent. Grösste Rumpfhöhe zwischen der Basis des 5. Dorsalstachels und des 1. Analstachels: 9.45, 9.5 und 12.4 Centim.

Kopflänge etwas mehr als $2\frac{2}{3}$ mal, $2\frac{3}{4}$ und etwas mehr als $2\frac{2}{3}$ mal in der Körperlänge, Augendiameter $2\frac{3}{5}$ mal, mehr als $2\frac{3}{4}$ mal und etwas mehr als $2\frac{2}{3}$ mal in der Kopflänge enthalten.

Bei einem 4^t, beschädigten kleinen Exemplare von 2.7 Cent. Körperlänge ist der Augendiameter $2\frac{1}{3}$ mal in der Kopflänge und diese fast $2\frac{1}{4}$ mal in der Körperlänge enthalten.

Die Seitenlinie durchbohrt bei 2 Exemplaren von c. 10--11 Cent. Totallänge 48—49, bei dem grössten Exemplare 55 Schuppen am Rumpfe. 16—17 Schuppen liegen zwischen der Basis des 5. Dorsalstachels und dem höchsten Stande der Seitenlinie und c. 40 zwischen letzterem und der Basis des ersten Analstachels.

D. $7/_{34-31}$. A. $2/_{35-33}$.

Scombridae.

a. CARANGINAE.

19. *Caranx chrysos* sp. Mitch.

Ein Exemplar, 30 Cent. lang, von Grand Cape Mount.

Leibeshöhe etwas mehr als 3 mal, Kopflänge c. $3\frac{5}{6}$ mal, Pectorale etwas mehr als $3\frac{1}{3}$ mal in der Körperlänge, Auge $4\frac{1}{5}$ mal, Stirnbreite unbedeutend mehr als 3 mal, Schnauze c. $3\frac{1}{2}$ mal in der Kopflänge enthalten.

Das hintere Ende des Oberkiefers fällt in vertikaler Richtung fast unter die Augenmitte. Unterkieferzähne 1-, Zwischenkieferzähne 2—3 reihig.

D. $8\frac{1}{2}_{24}$. A. $2\frac{1}{2}_{20}$. Sc. lat. c. 48.

20. *Caranx carangus* sp. Bl.

4 Exemplare, $15\frac{1}{2}$ - c. 32 Cent. lang, von Cape Mount und aus dem Brackwasser des Messurado-Flusses.

Leibeshöhe c. $2\frac{1}{2}$ — $2\frac{1}{3}$ mal, Kopflänge $3\frac{1}{5}$ — $3\frac{1}{6}$ mal in der Körperlänge, Augendiameter etwas weniger als 4 — $4\frac{1}{3}$ mal, Stirnbreite durchschnittlich 4 mal, Schnauzenlänge $3\frac{2}{5}$ — $3\frac{1}{3}$ mal in der Kopflänge enthalten. Brust schuppenlos.

D. $8\frac{1}{2}_{22-20}$. A. $2\frac{1}{2}_{18}$. Sc. lat. 30—33.

21. *Caranx africanus* Steind.

Caranx africanus Steind., Ichthyol. Beitr. (XIII), Sitzb. Wien. Akad. I. Abtheilg., Bd. 88 (1883) p. 1108, Taf. VII, fig. 1.

3 Exemplare, $29\frac{1}{2}$, $32\frac{1}{2}$ und $39\frac{1}{2}$ Cent. lang von Cape Mount.

Die 2—3 ersten Gliederstrahlen der 2^t Dorsale sind sehr stark verlängert und reichen zurückgelegt mit der Spitze nach über das hintere Basisende der 2^t Dorsale

Notes from the Leyden Museum, Vol. XVI.

zurück. Die Caudallappen sind gleichfalls von sehr bedeutender Länge und sehr schlank; der etwas längere obere Lappen ist bei 2 Exemplaren der Hälfte der Körperlänge gleich.

Die grösste Rumpfhöhe ist $2\frac{3}{5}$ — $2\frac{2}{5}$ mal, die Kopflänge $3\frac{3}{5}$ — $3\frac{2}{5}$ mal in der Körperlänge (d. i. bis zur Basis der mittleren Caudalstrahlen), der Augendiameter etwas mehr als 3—4 mal, die Stirnbreite c. $3\frac{3}{4}$ — $3\frac{3}{5}$ mal, die Schnauzenlänge c. $3\frac{3}{5}$ — ein wenig mehr als 3 mal, der 1. Gliederstrahl der Anale fast $1\frac{1}{3}$ — etwas mehr als 1 mal in der Kopflänge enthalten.

Die obere Kopflinie ist viel schwächer gebogen und erhebt sich auffallend minder rasch zur Dorsale als bei *Caranx carangus*. Der Kopf ist stark comprimirt und bildet bereits von hinteren Ende der Schnauze an längs der Mitte der Stirne und der Hinterhauptsgegend eine Schneide. Im Zwischenkiefer vorne und seitlich mehrere Zahnreihen, im Unterkiefer nur vorne 2 Zahnreihen. Die Zähne der Aussenreihe sind länger als die übrigen.

Die sichelförmige Pectorale ist durchschnittlich c. $1\frac{1}{2}$ mal länger als der Kopf.

Der horizontale Verlauf der Seitenlinie beginnt in vertikaler Richtung bald ein wenig vor bald ein wenig hinter dem Anfang der 2^{ten} Dorsale.

Ein ovaler Fleck zwischen je 2 auf einander folgenden Gliederstrahlen der Dorsale und Anale hinter dem erhöhten Theile dieser Flosse.

D. $6-7\frac{1}{13-21}$. A. $2\frac{1}{17-18}$. Sc. lat. 42—45.

22. *Trachynotus ovatus* L.

Ein grosses Exemplar, c. 42 Cent. lang, von Cape Mount; Körperlänge desselben bis zur Basis der mittleren Caudalstrahlen 29.7 Cent., grösste Rumpfhöhe 16 Cent., Kopflänge 7.8 Cent.

Kiefer bereits vollständig zahnlos. Länge der Caudale c. $3\frac{1}{2}$ mal, Leibhöhe c. $2\frac{3}{5}$ mal, Kopflänge c. $5\frac{1}{3}$ mal

in der Totallänge oder aber Leibeshöhe mehr als $1\frac{1}{3}$ mal, Kopflänge c. $3\frac{3}{8}$ mal in der Körperlänge, Auge c. $3\frac{3}{4}$ mal, Schnauze etwas mehr als 4 mal, Stirnbreite fast 3 mal in der Kopflänge enthalten.

Mundspalte klein, vorne von der Schnauze, Unterkiefer vom Zwischenkiefer überragt. 2 Querreihen überhäuteter Schuppen hinter dem Auge. Das hintere Ende des Oberkiefers fällt in vertikaler Richtung ein wenig von die Augenmitte.

Die Schnauze fällt fast geradlinig, und rascher zur Mundspalte ab, als die obere Kopflinie sammt der Rückenlinie von der Stirngegend an unter schwacher bogenförmiger Krümmung zur 2^{ten} Dorsale ansteigt.

Der vordere erhöhte Lappen der gliederstrahligen, 2^{ten} Dorsale reicht zurückgelegt bis zur Basis des 14^{ten} Gliederstrahles derselben Flosse und der erhöhte Theil der ergänzten) Anale c. bis zur Basis des 13^{ten} Analstrahles.

Vorderster Theil der Seitenlinie etwa bis zur Spitze der horizontal zurückgelegten Pektoreale schwach bogenförmig gekrümmt.

c. 112 Schuppen längs der Seitenlinie bis zum Beginn der Caudale und c. 36—38 zwischen der Basis des ersten Strahles der 2^{ten} Dorsale und der Seitenlinie in einer Vertikalreihe. Auf der Schuppenscheide nächst dem 1^{ten} Strahle der 2^{ten} Dorsale liegen 5 Schuppenreihen.

D. $6\frac{1}{21}$. A. $2\frac{1}{17}$.

b. SCOMBRINAE.

23. *Echeneis naucrates* Lin.

3 junge Exemplare aus dem Sugary-Flusse bei Grand Cape Mount, die beiden kleinsten derselben, 12.5 und 13.9 Cent. lang, mit 21 und 22 Lamellen auf der Saugscheibe, deren Länge mehr als $3\frac{2}{3}$ — $3\frac{3}{5}$ mal in der Totallänge enthalten ist.

Die mittleren Strahlen der Caudale sind vorgezogen,

Notes from the Leyden Museum, Vol. XVI.

der obere und untere Rand der Flosse gelblich gesäumt. Bei dem 3^t grössten Exemplare, das bereits im Leben die Caudale verlor, wie die vollständig vernarbte Stelle am Ende des Schwanzstieles zeigt, und dessen Körperlänge (ohne Caudale) c. 16 Cent. beträgt, wird die Saugscheibe von 24 Lamellenpaaren gebildet.

Pediculati.

24. *Antennarius marmoratus* Gthr.

Ein Exemplar, 8 Cent. lang, von Grand Cape Mount.

Körperhaut dicht mit kleinen flachen Wärzchen bedeckt. Kopf, Rumpf und Flossen mit braunen Marmorirungen, die mit äusserst kleinen schwarzen Pünktchen und etwas grösseren weissen Punkten und kleinen Fleckchen gesprenkelt sind. Zwischen der braunen Marmorirung unregelmässig gestaltete helle Flecken, die an den Rändern häufig ausgezackt sind.

25. *Antennarius Commersonii* sp. Lac.

Var. *A. campylacanthus* Blkr.

Antennarius campylacanthus Blkr., l. c. pag. 28 & 29, Tab. IV. Fig. 3.

2 Exemplare, 6.1 und 12 Cent. lang, von Robertsport und aus dem Cape Mount-Flusse. Sie entsprechen in der Körperzeichnung jener Varietät von *A. Commersonii* Lac., welche Dr. Bleeker l. c. als eine besondere Art unter dem Namen *Ant. campylacanthus* beschrieb.

Das kleinere der beiden Exemplare in Herrn Büttikofer's-Sammlung zeigt ganz dieselbe Anordnung und Zahl der dunkelbraunen Flecken wie das von Bleeker abgebildete Exemplar, bei dem grösseren dagegen ist die Zahl der Ocellarflecken sowohl am Rumpfe wie auf den Flossen bedeutlich beträchtlicher. Sie liegen nämlich mehr oder minder dicht am einander gedrängt in 3 Reihen auf der

Notes from the Leyden Museum, Vol. XVI.

Dorsale, Anale und Caudale und sind ferner, an Grösse und Form unter einander abweichend, über den ganzen Rumpf zerstreut, die kleineren Rumpfflecken sind von keinem hellen Ringe umgeben. Grubenförmige Einsenkungen mit stark erhöhten Rändern bezeichnen den Verlauf der Schleimkanäle am Kopfe und Rumpfe.

Kopf und Rumpf Kupferbraun, dicht mit 2 spitzigen Stacheln besetzt, die merklich länger und kräftiger sind als bei jenen Exemplaren, die das Wiener-Museum aus dem stillen und indischen Ocean besitzt.

26. *Antennarius histrio* sp. Lin.

1 Exemplar, 14 Cent. lang, von Robertsport.

Dasselbe reicht in mehrerer Beziehung von der typischen Form des *Ant. histrio* ab, als dessen eigentliche Heimath die Ostküste des tropischen Amerika zu betrachten ist.

Der 1. Dorsalstachel ist ein wenig länger als der 2^{te}, welche Eigenthümlichkeit ich übrigens auch bei einem jungen Exemplare von Bahia und einem zweiten aus Cuba ¹⁾ finde und trägt an seinem oberen Ende nicht 2 sondern 6 Läppchen (von verschiedener Länge und Breite), die vielleicht nur einer zufälligen, individuellen Spaltung der 2 normalen Hautlappen ihren Ursprung verdanken mögen. Körperhaut sehr rauh, mit 2spitzigen Stacheln dicht besetzt.

Auf der Caudale liegen 4 regelmässige Querreihen intensiv brauner Flecken; die Flecken jeder vorderen Reihe sind grösser als die der nächstfolgenden Reihe.

Die Anale trägt 3 Reihen noch grösserer Flecken, die parallel zum freien Flossenrande laufen und die Grundfarbe der Flosse bis auf ein mehr oder minder schmales Maschennetz verdrängen.

Gleichfalls sehr stark entwickelt und intensiv schwarzbraun gefärbt sind die 3 Fleckenreihen auf der Pekturale und Ventrale; sie laufen parallel zum freien Flossenrande.

1) *Antennarius tigris* Poey ist identisch mit *A. histrio* sp. L.

An und zunächst dem freien Rande der Ventralen sind die Flecken der Aussenreihe nur durch die helle Färbung der Flossenstrahlen von einander getrennt.

Auf der Dorsale bilden dunkle Flecken 6—7, schräge nach vorne und oben laufende Reihen. Die auf einander folgenden Flecken je einer Reihe fließen hie und da mehr minder vollständig zusammen, bilden daher theilweise schwäge Binden. Vom Auge laufen radienförmig nach oben, unten und hinten schmälere und breitere Binden bis gegen die Längenmitte des Rumpfes. In der hinteren Hälfte des letzteren liegen unregelmässige gestaltete, meist längliche Flecken von ungleicher Grössenentwicklung. An der Bauchseite des Rumpfes endlich liegen runde braune Flecken von mässiger Grösse und in ziemlich regelmässigen Abständen von einander, die grösser als die Flecken selbst sind.

Gobiidae.

27. *Gobius (Chonophorus) tajasica* Licht.

Tajasica, Georgi Marcgravi Historia Piscium, lib. I. pag. 144.

Gobius tajasica, Lichtenst. »Die Werke von Marcgrave und Piso über die Naturgeschichte Brasiliens, erläutert aus den wieder aufgefundenen Original-Abbildungen» (Fortsetz.), Verhandl. der königl. Akad. d. Wissensch. zu Berlin aus den Jahren 1820 und 1821 (Berlin 1822) pag. 273.

Gobius banana C. V., Gthr. etc.

Gobius tajasica Licht. entspricht zweifellos dem »*Tajasica*» in Marcgrav's Werke während die von Marcgrav als »*Amore Guacu*» beschriebene und abgebildete Art (l. c. Lib. IV, p. 166) zu *Eleotris* bezogen werden muss, wie auch aus Marckgrav's Beschreibung deutlich zu entnehmen ist. *Amore Guacu* ist daher aus der Synonymie von *G. tajasica* in D. S. Jordan & C. H. Eigenmann »A Review of the *Gobiidae* of N. America» (Proc. U. St. Nat. Museum, Vol. IX, 1886, pag. 500—501) zu streichen, ebenso der Passus in Günther's Cataloge (Bd. 3, pag. 59), dass *G.*

Notes from the Leyden Museum, Vol. XVI.

tajasica Licht. nicht mit Marcgrav's *tajasica* identisch sei.

Die Sammlung des Herrn Büttikofer enthält 8 Exemplare von c. 6.1—12 $\frac{1}{2}$ Centim. Länge aus dem Du Queah-Flusse bei Hill Town und aus dem Fischermann-See.

Die Kopflänge ist c. 3 $\frac{1}{9}$ - unbedeutend mehr als 3 mal (bei dem grössten Exemplare) in der Körperlänge, die Länge der Schnauze c. 2 $\frac{1}{2}$ mal, die des Auges 6 mal in der Kopflänge, die Breite des knöchernen Theiles der Stirne fast 3 mal in der Augenlänge enthalten, c. 64 Schuppen zwischen dem oberen Ende der Kiemenspalte und der Basis der Dorsale, und 15—16 zwischen dem Beginne der 2^{ten} Dorsale und der Anale. Bei grösseren Exemplaren von 14 $\frac{1}{2}$ Cent. Länge und ein wenig darüber liegen 17—18 Schuppen zwischen den beiden letztgenannten Flossen, die Kopflänge ist c. 3 $\frac{1}{9}$ mal in der Körperlänge und mehr als 4 mal in der Totallänge enthalten. Am vorderen Rande des Schultergürtels 2 Hautläppchen. Sämmtliche Fleckchen und Streifen auf dem Kopfe, Rumpfe und auf den Flossen carminroth.

28. *Gobius soporator* C. V.

Gobius Nigri Gthr., Catal. III. p. 27.

7 Exemplare von 5.9—11 $\frac{1}{2}$ Cent. lang, aus der Brandung bei Robertsport.

Ich habe diese Exemplare genau mit jenen verglichen, welche das Wiener Museum von Rio Janeiro, Westindien etc. besitzt, und bin nicht im Stande, einen nennenswerthen Artunterschied aufzufinden. Es liegen bei den Exemplaren von Liberia wie bei jenen aus Westindien und Brasilien 15 Schuppen zwischen der 2^{ten} Dorsale und der Anale, nicht aber 12 wie Dr. Günther (Catal. III. p. 26) angibt, daher ich auch keinen Anstand nehme, *G. nigri* Gthr. mit *G. soporator* zu vereinigen zumal letztere Art zuweilen 11 ($\frac{1}{10}$) Strahlen in der 2^{ten} Dorsale zeigt. Die oberen Pektoralstrahlen sind haarförmig. 38—41 Schuppen

Notes from the Leyden Museum, Vol. XVI.

zwischen dem oberen Ende der Kiemenspalte und der Basis der Caudale.

D. $6\frac{1}{9}$. A. $\frac{1}{3}$.

29. *Periophthalmus Koelreuteri* sp. Pall.
var. *papilio* Bl. Schn.

6 Exemplare, von $9\frac{1}{2}$ —13.2 Cent. Länge, von Robertsport und Grand Cape Mount.

Bei jedem derselben ist die erste Dorsale am oberen Rande breit schwarzbraun gesäumt, nur die Spitzen der ersteren Strahlen sind weisslich. Die schwarzbraune Längsbinde der 2^t Dorsale ist am oberen und unteren Rande von einem weissen Streife begrenzt.

30. *Eleotris (Culius) Pisonis* sp. L. Gmel.
(*Eleotris gyrimus* C. V., Gthr.).

5 Exemplare, 8—25 Cent. lang, aus dem Du Queah-Flusse bei Hill Town.

58—63 Schuppen zwischen dem oberen Ende der Kiemenspalte und der Basis der Anale. Bei 2 kleinen Exemplaren von 8 — $10\frac{1}{2}$ Cent. Länge ist die Entfernung der oberen Augenränder von einander nur wenig grösser als die Länge eines Auges, bei 3 Exemplaren von 20—25 Cent. Länge nahezu 2 — $2\frac{1}{2}$ Augenlängen gleich. Die Kopflänge ist $3\frac{1}{4}$ —mehr als $3\frac{1}{2}$ mal in der Totallänge enthalten. Zähne der innersten Reihe in beiden Kiefern ein wenig länger und stärker als alle übrigen. Wangen beschuppt. 20 Schuppen zwischen dem Beginne der 2^t Dorsale und der Anale bei grossen Exemplaren.

31. *Eleotris (Culius) Büttikoferi* n. sp.

15 junge Exemplare, 4.7—9 Cent. lang und 1 Exemplar, 20 Cent. lang, aus dem Du Queah-Flusse.

E. Büttikoferi unterscheidet sich von dem nahe verwandten *E. Pisonis* durch die Grösse der Schuppen an

den Seiten des Rumpfes und am Hinterhaupte, ferner durch den Mangel von Schuppen in der Wangengegend bis auf einen Streif, der von der ganzen Höhe des hinteren Augenrandes zum hinteren Rand des Vordeckels zieht, bei kleinen Individuen übrigens auch schuppenlos bleibt.

Der Deckel ist im Gegensatze zu den gleichfalls sehr nahe verwandten *E. senegalensis* und *E. daganensis* Steind. vollständig beschuppt. In der Kopfform und Vertheilung der Porenreihen am Kopfe stimmt *E. Büttikoferi* mit *E. Pisonis* überein.

Bei dem grössten Exemplare von 20 Cent. Länge ist die grösste Rumpfhöhe nahezu 4 mal, die Kopflänge mehr als $2\frac{3}{4}$ mal in der Körperlänge, der Augendiameter $6\frac{2}{3}$ mal, die Entfernung der oberen Augenränder c. $3\frac{1}{2}$ mal, die Schnauzenlänge bis zur Kienspitze nahezu $3\frac{1}{2}$ mal, die grösste Kopfbreite $1\frac{3}{5}$ mal, die grösste Kopfhöhe fast $1\frac{3}{4}$ mal, die Länge der Pectorale c. $1\frac{3}{5}$ mal, die der Ventrals mehr als $1\frac{1}{2}$ mal in der Kopflänge enthalten.

Kopf breit, an der Oberseite flach, Mundspalte stark nach vorne und oben ansteigend, Unterkiefer vorspringend. Das hintere Ende des Unterkiefers fällt in vertikaler Richtung merklich vor den hinteren Augenrand. Unter- und Zwischenkieferzähne vielreihig, gegen die innerste Zahnreihe ganz unbedeutend an Grösse zunehmend. Wangen schuppenlos bis auf eine schmale Längsbinde zwischen dem hinteren Rande des Auges und dem hinteren Vordeckelrande. Stirne und Schnauze schuppenlos. Ein hackenförmiger Stachel in der Winkelgegend des Vordeckels, mit der Spitze nach unten gekehrt.

Die Rumpfschuppen nehmen gegen die Caudale ziemlich bedeutend an Grösse zu, c. 47—48 Schuppen liegen zwischen dem oberen Ende der Kiemenspalte und der Basis der Caudale, c. 15—16 zwischen dem Beginne der 2ten Dorsale und der Anale. Sämmtliche Flossen auf bräunlichgelben Grunde grauviolett gefleckt. Die Flecken bilden auf der Pectorale, Caudale und Ventrals Querreihen, parallel zum freien Flossenrande bogenförmig gekrümmt,

Notes from the Leyden Museum, Vol. XVI.

insbesondere auf den 2 erstgenannten Flossen. Seiten des Rumpfes mehr oder minder zart graubraun gefleckt.

Bei einem kleinen Exemplare von c. $8\frac{1}{2}$ Cent. Länge (N^o 544) ist die Leibeshöhe nahezu 5 mal, die Kopflänge 3 mal in der Körperlänge, der Augendiameter c. 6 mal, die Stirnbreite c. 4 mal, die Schnauzenlänge c. $3\frac{1}{5}$ mal, die grösste Kopfbreite c. $1\frac{1}{2}$ mal, die grösste Kopfhöhe fasst $1\frac{1}{4}$ mal, die Länge der Pectorale c. $1\frac{1}{3}$ mal in der Kopflänge enthalten. Die Mundwinkel fallen unter die Augenmitte.

Die Schnauze ist viel schmaler und querüber bedeutend gewölbter als bei dem früher beschriebenen grossen Exemplare und in den Kiefern liegen in der äussersten Reihe etwas grössere Zähne als in den übrigen, ziemlich zahlreichen Reihen. 52 Schuppen zwischen dem oberen Ende der Kiemenspalte und der Basis der Caudale, 15 zwischen dem Beginn der 2^t Dorsale und der Caudale.

Die dunklen Fleckchen bilden in der oberen Rumpfhälfte ziemlich regelmässige Längsreihen, die Schuppen der unteren Rumpfhälfte sind sehr zart punktirt.

Bei noch kleineren Individuen von c. 4.7—6 Cent. Länge ist der Augendiameter c. $5\frac{3}{5}$ mal, die Stirnbreite 6 mal, die Schnauzenlänge c. 4 mal, die grösste Kopfbreite c. 2 mal, die Kopfhöhe c. $2\frac{1}{5}$ mal in der Kopflänge enthalten. c. 51—52 Schuppen zwischen dem oberen Ende der Kiemenspalte und der Basis der Caudale, 15 zwischen der 2^t Dorsale und der Anale. Die Zahl der Zahnreihen in den Kiefern ist merklich geringer und die Zähne selbst sind verhältnissmässig schlanker, stärker zugespitzt und minder dicht an einander gedrängt als bei den Exemplaren von 8 Cent. Länge und darüber. Ferner sind die Zähne der äussersten und der innersten Reihe ein wenig länger als die der wenigen mittleren Reihen. Ich bin daher in einigem Zweifel, ob die zuletzt erwähnten 5 kleinsten Exemplare als Jugendform zu *E. Büttikoferi* bezogen werden dürfen oder einer eigener Art angehören.

Blenniidae.32. *Salarias vomerinus* C. V.

8 Exemplare, 4—6 Cent. lang von Robertsport.

Die Kopflänge ist bei dem kleinsten Exemplare fast 5 mal bei dem grössten $4\frac{1}{3}$ mal, die grösste Rumpfhöhe bei ersterem 6- bei letzterem $6\frac{1}{3}$ mal in der Totallänge enthalten. Ein sehr tiefer Einschnitt trennt die beiden Dorsalen von einander; der höchste 3^{te} Strahl der 1^{te} Dorsale ist ein wenig mehr als 2 mal, der höchste 2. oder 3. Strahl der 2^{te} Dorsale mehr als $1\frac{1}{3}$ mal und der Augendiameter c. $4\frac{1}{3}$ mal in der Kopflänge enthalten. Die 4 untersten Pektoralstrahlen sind verdickt.

Das zarte paarige Nacktentakel fehlt zuweilen. Augentakel gefiedert.

2 \wedge förmige dunkle Binden ziehen von der Hinterhauptsgegend nach vorne und unten, und zwar die hinteren Binde zum Mundwinkel, die vordere, vom Auge unterbrochen, c. zur Längensmitte des oberen Mundwinkels.

D. $12\frac{1}{15}$. A. 18. P. 14. V. 3.

33. *Blennius crinitus* C. V., Gthr.?

Mehrere kleine Exemplare bis zu 6 Cent. Länge von Robertsport.

Obgleich dieselben in der Körperzeichnung genau mit *Blennius cristatus* L. übereinstimmen, glaube ich dieselben doch zu *Bl. criniger* vorläufig beziehen zu müssen, da nur in Unterkiefer ein gekrümmter etwas längerer Zahn am Ende der Zahnreihe entwickelt ist und am oberen Augenrande nicht ein, sondern 3—4 Tentakeln dicht neben einander liegen.

Die Kopflänge ist $4\frac{1}{2}$ — $4\frac{2}{3}$ mal, die Rumpfhöhe mehr als 6 — $5\frac{1}{2}$ mal in der Totallänge enthalten. Die Flossenhaut des letzten Dorsalstachels setzt sich an den Vorderrand des folgenden 1^{te} Strahles der 2^{te} Dorsale c. in dessen

Notes from the Leyden Museum, Vol. XVI.

Höhenmitte an. Die Spitze der zurückgelegten Pectorale reicht in der Regel nicht ganz bis zum Beginn der Anale zurück.

Die Schnauze fällt steil zum vorderen Mundrande ab und zwar unter sehr schwacher Bogenkrümmung 5—6 nicht scharf abgegrenzte braune Querbinden am Rumpfe in dessen oberer Hälfte und überdies dunklere Fleckchen, welche im hinteren Theile des Rumpfes dichter an einander gerückt, daselbst 3—4 regelmässige Längsreihen bilden. Ein dunkler Fleck zwischen den 2 ersten Strahlen der ersten Dorsale. Zweite Dorsale in schräger Richtung dunkelbraun gestrichelt.

D. $12\frac{1}{11}$. A. 17. P. 14. V. 3.

Mastacembelidae.

34. *Mastacembelus Marchei* Sauv.

3 Exemplare, 23—29 Cent. lang, aus dem Fischer-mann-See nächst dem Dorfe Solymah.

Die Kopflänge, bis zum oberen Ende der Kiemenspalte nächst der Basis der Pectorale gemessen, und mit Ausschluss des häutigen Nasalanhangs ist $9-8\frac{2}{3}$ mal in der Kopflänge enthalten. Der Nasalanhang ist c. 2 mal so lang wie das Auge. Die grösste Rumpfhöhe ist $1\frac{1}{2}$ - nahezu $1\frac{1}{4}$ mal, die Länge der Pectorale $4-4\frac{3}{5}$ mal in der Kopflänge enthalten.

Die Zahl der Dorsalstacheln schwankt zwischen 26—30; die Zahl der Gliederstrahlen in der Dorsale beträgt c. 78, die der Anale c. 80.

Bauchseite des Rumpfes hell graubraun oder hell gelblichgrau (bei Weingeistexemplaren). Die Seiten des Rumpfes sind grauviolett und von einem Netze dunklerer, braunvioletter Linien oder Streifen durchzogen, welche die Grundfarbe der Rumpfsseiten in zahllose Flecken auflösen, die gegen die Caudale rasch an Umfang zunehmen.

Die Spitzen der gegliederten Dorsal- und Analstrahlen sind hellblau, unter, resp. über dem freien Rand der

Notes from the Leyden Museum, Vol. XVI.

Dorsale und Anale liegt eine dunkelviolette Binde. Der Rest derselben Flossen ist heller grauviolett, wird aber gegen die Caudale zu allmähig dunkelviolett und ist mit weisslichgrauen Flecken geziert, die nächst der Schwanzflosse am schärfsten abgegrenzt sind, und durch ihre allmähig ins Gelbliche übergehende Färbung von der dunklen Umgebung sich scharf abheben. Caudale dunkel violett mit gelblichen Flecken.

Höchst wahrscheinlich fällt *Mast. Marchei* Sauv. der Art nach mit *M. cryptacanthus* Gthr. zusammen; ich habe jedoch vorläufig die mir zur Bestimmung eingesendeten Exemplare aus Liberia zu *M. Marchei* bezogen, die sie mit der von Sauvage gegebenen Beschreibung in der Zahl der Gliederstrahlen der Dorsale und Anale so wie auch in Körperzeichnung von *M. Marchei* besser übereinstimmen als mit dem äusserst kurz nach Einem Exemplare charakterisirten *M. cryptacanthus*, der c. 100 Strahlen in der Dorsale sowie in der Anale besitzen soll und bei welchem ferner der hintere Schwanztheil unregelmässig, fein schwarz punktirt ist.

P. 20—26. D. 26—30/c. 78. A. 2/80—c. 70 (bei dem gr. Ex.).

Sphyraenidae.

35. *Sphyraena dubia* Blkr.

Sphyraena dubia Blkr., Mém. sur les Poissons de la Côte de Guinée, pag. 70, Tab. XV, fig. 2.

Ein Exemplar, c. $36\frac{1}{2}$ Cent. lang, von Cape Mount.

Kopflänge 3 mal in der Körperlänge oder c. $3\frac{1}{5}$ mal in der Totallänge, Leibeshöhe c. $7\frac{1}{5}$ mal in der Körperlänge oder c. 9 mal in der Totallänge, Augendiameter $5\frac{1}{5}$ mal in der Kopflänge oder c. $1\frac{1}{5}$ mal in dem hinter dem Auge gelegenen Theile des Kopfes, die Schnauze bis zur Spitze des fleischigen, konischen Fortsatzes gemessen fast 2 mal, bis zur Spitze des Zwischenkiefers $2\frac{1}{3}$ mal, Stirnbreite 6 mal, Länge der Pectorale etwas weniger als 3 mal (oder c. $10\frac{3}{5}$ — $10\frac{2}{3}$ mal in der Totallänge); Länge

Notes from the Leyden Museum, Vol. XVI.

der Schwanzflosse c. $1\frac{1}{2}$ mal, die der Ventrals c. $3\frac{1}{4}$ mal in der Kopflänge enthalten.

Der hintere Rand des Vordeckels ist stark gerundet, der untere Rand fast geradlinig und ein wenig nach unten und vorne geneigt; der Vordeckelwinkel ist nicht vorgezogen.

Der Kiemendeckel endigt nach hinten in 2 Vorsprünge, von denen nur der untere in einen sehr zarten spitzen Stachel ausläuft; beide sind durch einen überhäuteten dreieckigen Einschnitt von einander getrennt.

Das hintere Ende des Oberkiefers fällt vertikal unter den vorderen Augenrand. Zähne im Zwischenkiefer schräge nach hinten gerichtet. Präorbitale am unteren Rande stark stumpfwinkelig ausgeschnitten. Unterkiefer vorne mit einem kurzen, konischen Anhang. Die Spitze der Pectorale fällt in vertikaler Richtung zwischen die Basis des 2. und 3ten Stachels der ersten Dorsale und den Beginn der letztgenannten Flosse etwa um $\frac{1}{3}$ einer Augenlänge hinter die Einlenkungsstelle der Ventralen.

Der Abstand beider Dorsalen von einander (mit ihrem ersten Stachelstrahl) gleicht der Entfernung der 2ten Dorsale von der Basis der mittleren Caudalstrahlen oder c. $\frac{5}{6}$ der Kopflänge. Anale und 2te Dorsale am hinteren Strahl halbmondförmig eingebuchtet mit stark vorgezogenem letzten Strahl. Caudale tief dreieckig eingeschnitten.

D. $5-\frac{1}{9}$. A. $\frac{2}{3}$ L. lat. c. 110 (+ c. 10 auf der Caudale). L. tr. 12—13/1 c. 14 zwischen 1 D. und V.).

Mugilidae.

36. *Mugil cephalus* Cuv.

2 Exemplare, c. $23\frac{1}{2}$ und $24\frac{1}{2}$ Cent. lang, von der Mündung des Messurado-Flusses.

Die Angabe einiger Autoren, dass bei dieser Art die vertikalen Flossen schuppenlos seien, ist nicht ganz wörtlich zu nehmen, da auf der Anale die Flossenhaut zwi-

schen den nahe an einander liegenden Stacheln dicht beschuppt ist und mindestens hinter jedem der vordersten Gliederstrahlen der 2^{ten} Dorsale und der Anale ein schmaler Schuppenstreif bis zur Strahlenspitze hinzieht. Bei halberwachsenen Individuen, so z. b. bei dem 23¹/₂ Cent. langem Exemplare aus dem Messurado-Flusse liegt häufig ein Schuppenstreif hinter jedem Analstrahle.

Die Zahl der Schuppenreihen des Rumpfes schwankt hauptsächlich je nach dem Alter zwischen 38—43. Bei jedem der beiden Exemplare aus Liberia liegen c. längs der Höhenmitte des Rumpfes 38 Schuppen bis zum Beginn der Schwanzflosse.

37. *Mugil curema* C. V.

2 Exemplare aus der Grand Cape Mount-Bucht, 28 und 28¹/₂ Cent. lang, glaube ich zu *Mugil curema* C. V. (= *M. brasiliensis* Gthr. nec Agass.) beziehen zu müssen, da sie mit dieser Art in der Zahl der Schuppen am Rumpfe, durch die völlige Überschuppung der 2^t Dorsale und der Anale und in der Kopfform übereinstimmen.

Die Kopflänge ist 5¹/₂—5¹/₅ mal, die grösste Leibeshöhe 4⁷/₈ bis nahezu 5 mal in der Totallänge oder erstere c. 4¹/₅—4¹/₇ mal, letztere mehr als 3¹/₅—3²/₃ mal in der Körperlänge, der Augendiameter etwas mehr als 4¹/₃ mal, die Stirnbreite c. 2¹/₂ mal, die Schnauzenlänge fast 3²/₃ mal, die Höhe des 1^t Stachels der 1. Dorsale 1¹/₃ mal in der Kopflänge enthalten. Stirne querüber schwach convex, noch schwächer die Oberseite der Schnauze. Der von den beiden Unterkieferästen gebildete Winkel ist ein wenig kleiner als ein rechter und nur das hintere Ende des Oberkiefers bei geschlossenem Munde als ein kurzer, linienförmiger Streif sichtbar. Unterer Rand des Präorbitale zart gezähnt. Der zwischen den Mandibeln und den Zwischendeckeln frei liegende Theil an der Unterseite des Kopfes ist schmal, keilförmig. Fettlied des Auges stark entwickelt. Auf der Oberseite der Schnauze liegen sehr

kleine Schuppen; zwischen dem hinteren Ende der Schnauze und dem Beginn der 1^{te} Dorsale 21—22 grosse Schuppen. Die Länge der Pectorale gleicht der des Kopfes mit Ausschluss der Schnauze, die Spitze der Bauchflossen fällt auf den hinteren Rand der 9^{ten} Rumpfschuppe, der Beginn der 1^{te} Dorsale auf die 11. oder 12., der der 2^{ten} Dorsale auf die 22. oder 23. Querschuppenreihe des Rumpfes.

Die beiden hier kurz beschriebenen Exemplare wurden mir unter der Bezeichnung *Mugil ashantensis* Blkr. eingesendet, zu welcher Art ich sie aber nicht beziehen zu dürfen glaube.

D. $4\frac{1}{3}$. A. $\frac{3}{9}$. L. l. 38—39. L. tr. $12\frac{1}{2}$.

38. *Mugil falcipinnis* C. V.

2 Exemplare, 23.2 und 28 Cent. lang, von der Mündung des Messurado-Flusses und aus dem Fischermann-See, ein 3^{tes} Exemplar nur 5.7 Cent. lang von der Mündung des Cape Mount-Flusses.

Bei den beiden grossen Exemplaren ist die Kopflänge fast $3\frac{2}{3}$ - etwas mehr als $3\frac{2}{3}$ mal, bei dem kleinen Exemplare etwas weniger als $3\frac{1}{2}$ mal, die Leibeshöhe bei ersteren wie bei letzterem c. $3\frac{1}{2}$ mal in der Körperlänge, der Augendiameter bei den erwachsenen Exemplaren 4— $4\frac{1}{2}$ mal (bei dem kleinen aber 3 mal), die Stirnbreite $2\frac{2}{5}$ — $2\frac{3}{5}$ mal, die Schnauzenlänge 4 mal in der Kopflänge enthalten.

Die Pectorale ist stets merklich länger als der erste Gliederstrahl der sichelförmigen Anale und c. $1\frac{1}{5}$ — $1\frac{1}{9}$ in der Kopflänge begriffen. Die Länge der Caudale übertrifft $\frac{1}{3}$ der Körperlänge. 2^{te} Dorsale und Anale unbeschuppt.

D. $4\frac{1}{9}$. A. $\frac{3}{11}$. P. $\frac{2}{14-16}$. L. l. 36—38 (+ 3—4 auf d. C.). L. tr. $13\frac{1}{2}$ (zwischen der 1. D. und der Bauchlinie).

Fistularidae.39. *Fistularia tabaccaria* Lin.

Ein Exemplar mit Einschluss der Caudalfäden 41 Cent., mit Ausschluss der Caudale 30 Cent. lang, von Grand Cape Mount.

Kopflänge 18, Augendiameter 1, Schnauzenlänge 8.1 Cent., Stirnbreite 4 Mm. Seitenleiste der Schnauze zart und stumpf gezähnt.

D. 15. A. 16. L. 1. 79.

Ophiocephalidae.40. *Ophiocephalus obscurus* Gthr.

Ophiocephalus obscurus, Gthr., Ann. & Mag. Nat. Hist., Ser. III Vol. 13, pag. 211 (1864), Steind., Ichthyol. Beitr. (X), Sitzb. Wien. Akad. I. Abth. Bd. 83 pag. 197 (1881).

9 Exemplare, $10\frac{1}{2}$ — $27\frac{1}{2}$ Cent. lang, aus den Bächen am Fischermann-See, dem Sulumah-Flusse und von Buluma. Vulgärn.: Bogolo.

Sämmtliche Exemplare stimmen in der Körperzeichnung, in der Schuppen- und Flossenstrahlenzahl genau mit jenen überein, welche ich l. c. aus dem Bahr el Seraf und Bahr el Gebel beschrieb. Zuweilen vereinigen sich hie und da die Rumpfflecken der mittleren und der untersten Reihen unter einander und bilden zusammen kurze schräge Querbinden.

Eine Reihe dunkelbrauner, runder Flecken im basalen Theile der Dorsale und 5—6 Reihen von in Strichelchen aufgelösten Längsstreifen in der oberen Flossenhälfte. Die Strichelchen der unteren Reihe sind stets ein wenig breiter als die der darüberliegenden Reihe.

Kopflänge bei den kleinsten Exemplaren $3\frac{1}{7}$ mal, bei den grössten 7 mal, Leibeshöhe $6\frac{1}{2}$ — $6\frac{2}{7}$ mal in der Körperlänge, Augendiameter $6\frac{1}{2}$ —9 mal, Stirnbreite et-

was mehr als $4-3\frac{3}{4}$ mal, Schnauzenlänge c. $4\frac{1}{2}-4$ mal in der Kopflänge enthalten.

D. 40—41. A. 29—30. L. l. 70—62 (63 bei dem grösst. Ex.). L. tr. $6\frac{1}{11}$.

Labyrinthici.

41. *Ctenopoma Petherici* Gthr.

6 Exemplare, 7.7 und 17.4 Cent. lang, aus dem St. Paul- und Sulymah-Flusse, aus einem Waldbache bei Buluma und aus dem Fischermann-See.

Bei dem kleinsten Exemplare ist die Kopflänge c. $2\frac{1}{2}$ mal, bei dem grössten etwas mehr als 3 mal, die Rumpfhöhe bei ersterem c. $2\frac{1}{2}$ mal, bei letzterem mehr als $2\frac{1}{2}$ mal in der Körperlänge, der Augendiameter $3\frac{2}{3}-4\frac{2}{3}$ mal, die Schnauzenlänge 4- mehr als $3\frac{2}{3}$ mal, die Stirnbreite c. 3 mal in der Kopflänge enthalten.

Das hintere Ende des Oberkiefers fällt insbesondere bei kleinen Individuen merklich vor die Augenmitte. 5—6 Schuppenreihen zwischen dem Augenrande und dem Winkel des Vordeckels.

Der obere Ast der Seitenlinie durchbohrt 16—17, der untere hintere Ast 9 Schuppen am Rumpfe und 3 auf der Caudale.

D. $16-\frac{17}{10}$. A. $8-\frac{9}{11-12}$. L. tr. $2\frac{1}{2}\frac{1}{1}$.

Labridae.

42. *Coris guineensis* Blkr.

Ein Exemplar, 23 Cent. lang, von Robertsport.

Leibeshöhe der Rumpfhöhe gleich und c. $3\frac{1}{2}$ mal in der Körperlänge, Augendiameter etwas weniger als 8 mal, Schnauzenlänge ein wenig mehr als 3 mal, Stirnbreite mehr als 5 mal, Länge der Pectorale c. $1\frac{3}{4}$ mal, die der Ventrals c. $1\frac{1}{4}$ mal in der Kopflänge enthalten.

Die Seitenlinie durchbohrt c. 71 Schuppen. Die Krüm-

mung der Seitenlinie fällt unter und zwischen den 5^t und 4^t letzten Gliederstrahl der Dorsale. 24 Schuppen zwischen der Seitenlinie und dem Beginn der Anale und 4 zwischen ersterer und der Basis der mittleren Dorsalstacheln.

Kopf und Rumpf sind grauviolett. Eine bläuliche Binde zieht von der Mundwinkelgegend längs dem unteren Augenrande zur Deckelspitze. Über derselben liegt, vom hinteren Augenrande angefangen eine 2^{te}, im Leben vielleicht purpurroth gefärbte Längsbinde.

Eine sehr breite, grauviolette Längsbinde zieht über die ganze Dorsale hin, sie ist am breitesten im stacheligen Theile der Flosse und nimmt im gliederstrahligen Theile derselben allmählig an Höhe ab, deckt daher daselbst durchschnittlich nur das grössere mittlere Höhendrittel der Dorsale. Eine violette Linie am oberen Rande der Dorsale und 2 an und nächst über dem unteren Rande der Anale. Auf der Caudale sind nur mehr äusserst schwache Spuren heller Flecken erhalten.

D. $\frac{9}{12}$. A. $\frac{3}{12}$.

Chromidae.

43. *Chromis niloticus* Hasselq., Steind.

6 kleine Exemplare, 7 $\frac{1}{2}$ —8.8 Cent. lang, von Robertsport und aus dem Junk-Flusse.

2—3 Schuppenreihen auf den Wangen. Pectorale nur $\frac{1}{2}$ — $\frac{2}{3}$ Augenlängen länger als der Kopf. Leibeshöhe 2—2 $\frac{1}{4}$ mal, Kopflänge 3 mal in der Körperlänge enthalten.

D. $\frac{15-16}{12-14}$. L l. 29. L. tr. $3\frac{1}{2}\frac{1}{9}$ —10.

44. *Chromis mossambicus* Pet., Steind.

Von dieser Art, die ich in einer Abhandlung über die Fische des Senegal, 2^t Abth. (Sitzb. der Wien. Akad. I. Abth. Bd. 60 pag. 23—26 (im Separat-Abdr.) Taf. IV. Fig. 4) ausführlich nach Exemplaren aus dem Senegal beschrieb und abbildete, liegen mir 9 Exemplare von

Notes from the Leyden Museum, Vol. XVI.

5.1—18 Länge aus dem St. Paul-Flusse bei Soforeh-Place vor. Bei der Mehrzahl derselben sind sowohl die Querbinden am Rumpfe (7 an der Zahl) wie die an der Oberseite des Kopfes gelegenen (4) Binden sehr deutlich ausgeprägt. 3—4 Schuppenreihen auf den Wangen. Länge der Pectorale höchstens nahezu einer Kopflänge gleich, in den meisten Fällen merklich kürzer als der Kopf.

Bei den kleinsten Exemplaren aus Liberia ist die Rumpfhöhe c. $2\frac{2}{3}$ mal, bei den grösseren $2\frac{1}{3}$ -, $2\frac{1}{2}$ -, $2\frac{2}{3}$ mal, bei dem grössten $2\frac{1}{6}$ mal in der Körperlänge enthalten. In der Dorsale sind nur bei einem mittelgrossen Exemplare 17, bei allen übrigen 16 Stacheln und stets 13 Gliederstrahlen, in der Anale 3 Stacheln und 8—9 Gliederstrahlen entwickelt.

L. horiz. 30. L. tr. $3\frac{1}{2}$ — $4\frac{1}{10}$ (bis zur V.).

45. *Chromis Büttikoferi* Hubr.

Chromis Büttikoferi Hubr. On a coll. of Fish. from the St. Paul River, Liberia in »Notes from the Leyden Mus., Vol. VIII. pp. 66—68.

3 Exemplare, 6.7, 7.2 und 10.5 Cent. lang, aus dem St. Paul-Flusse bei Soforeh Place.

Leibeshöhe constant 2 mal, Kopflänge 3 mal in der Körperlänge, Augendiameter 3 mal, Schnauzenlänge 3— $2\frac{3}{4}$ mal, Stirnbreite etwas mehr als $3\frac{1}{2}$ —3 mal, Länge der Pectorale $1\frac{1}{2}$ —1 mal in der Kopflänge enthalten.

5—6 Schuppenreihen auf den Wangen. Bei dem grössten Exemplare ist auf einer Kopfseite die mittlere 3^{te} Schuppeureihe nicht in der ganzen Länge der Wangengegend entwickelt, sondern nur in der vorderen Hälfte der letzteren, daher im hinteren Theile der Wangen 4, in dem vorderen aber 5 Schuppenreihen liegen.

Die obere Hälfte der Seitenlinie durchbohrt 20—22, die hintere untere 11—12 Schuppen am Rumpfe und 2 auf der Caudale. Zwischen dem oberen Ende der Kiemenspalte und der Caudale liegen 29—30 Schuppen in einer Längsreihe, ferner $4\frac{1}{2}$ /_{11—12}, bei einem Exemplare auf einer

Notes from the Leyden Museum, Vol. XVI.

Rumpfseite $5\frac{1}{2}/11\frac{1}{2}$ Schuppen zwischen der Basis der mittleren Dorsalstacheln und dem Bauchrande.

2 braunviolette Querbinden am Kopfe (und Nacken) 4 am Rumpfe und 2 am Schwanzstiele. Die Zwischenräume zwischen den Rumpfbinden sind ein wenig schmaler als letztere. Die 3 ersten Rumpfbinden erstrecken sich auch über die Basis der Rückenflosse, treten aber auf letzterer nicht scharf hervor; die 4^{te} bildet einen grossen deutlich abgegrenzten Fleck auf der gliederstrahligen Dorsale und auf der Anale. Die 1. Binde des Schwanzstieles setzt sich schräge nach vorne über den basalen Theil und die 2^{te} Schwanzbinde über den oberen, respekt. unteren Theil der Gliederstrahlen eben dieser Flossen fort. Sämmtliche Rumpfbinden ziehen am Rumpfe ein wenig schräge nach hinten und unten. Die vorderste Kopfbinde läuft über die Stirne und seitlich unter dem Auge bis zum unteren Rand des Vordeckels. Die 2^{te} Kopfbinde beginnt am Nacken, zieht hierauf über den Deckel und Unterdeckel herab und endigt an der Unterseite der Brustgegend. Das vorderste Längenviertel der Caudale ist goldgelb wie die Grundfarbe des Rumpfes (bei Weingeistexemplaren), der Rest der Flosse wässerig grauviolett bis in die Nähe des heller gefärbten hinteren Randes.

Der erste Gliederstrahl der Ventrals ist fadenförmig verlängert, etwas mehr als $2\frac{1}{2}$ — $2\frac{3}{4}$ mal in der Kopflänge enthalten; seine Spitze erreicht die Basis des 3^{ten} Analstachels.

D. $\frac{14}{16}$, $\frac{15}{16}$, $\frac{15}{16}$. A. $\frac{3}{10}$ —11. P. 14.

46. *Paratilapia* (*Pelmatochromis* n. subg.)
Büttikoferi n. sp.

Abgesehen von der spitzen, konischen Form sämmtlicher Kieferzähne unterscheidet sich diese Art dem Habitus nach so wie auch in der Körperzeichnung nicht von *Chromis mossambicus*, mit dem sie daher leicht verwechselt werden könnte.

Notes from the Leyden Museum, Vol. XVI.

Körperform oval, bei kleinen Individuen bedeutend hochrückiger als bei erwachsenen, die Leibeshöhe ist bei ersteren etwas mehr als 2 mal, bei letzteren c. $2\frac{1}{4}$ mal, die Kopflänge c. $2\frac{2}{3}$ — $2\frac{3}{4}$ mal in der Körperlänge, der Augendiameter etwas mehr als 3— $3\frac{1}{4}$ mal, Stirnbreite $3\frac{2}{3}$ — $2\frac{3}{4}$ mal, Schnauzenlänge 3— $2\frac{1}{2}$ in der Kopflänge enthalten.

Die obere Profillinie des Kopfes erhebt sich bei jungen Individuen rascher und von der Stirne angefangen auch unter ein wenig stärkerer Krümmung zur Dorsale als bei alten, völlig erwachsenen Exemplaren, bei welchen die Schnauze merklich länger ist als bei jungen Individuen.

Das hintere Ende des Oberkiefers fällt unter den vorderen Augenrand. Die Mundspalte steigt nur mässig nach vorne und die Kiefer reichen gleich weit nach vorne.

Im Zwischenkiefer liegen vorne c. 7, im Unterkiefer ebendasselbst c. 6 Reihen spitzer, konischer Zähne; gegen die Mundwinkel nimmt die Zahl der Zahnreihen rasch ab, sodass im hintersten zahntragenden Theile der Kiefer nur mehr 1—2 Zahnreihen stehen. Die nach innen gebogenen Spitzen der Zähne sind tief goldgelb und die Zähne der Aussenreihe in beiden Kiefern ein wenig länger und stärker als die übrigen.

3—4 Reihen von Schuppen zwischen dem unteren Augenrande und der Vorleiste des unteren Präoperkelrandes, und 6—7 Schuppen zwischen dem hintere Rande des Vordeckels.

Der hintere Rand des Vordeckels ist geradlinig, vertikal gestellt, der untere viel kürzere Rand sehr schwach concav; beide Ränder treffen unter einem rechten Winkel zusammen, dessen Spitze gerundet ist. Schnauze, Präorbitale, Kiefer und der Raum zwischen der Vorleiste und den Rändern des Vordeckels unbeschuppt. Sehr grosse Schuppen liegen am Kiemendeckel.

Der 4.—7. oder 5.—7. Stachel der Dorsale gleichen sich an Höhe und sind bei jüngeren Exemplaren auch die höchsten Stacheln der Flosse, bei kleinen Exemplaren 2 mal, bei grossen $2\frac{1}{3}$ — $2\frac{3}{4}$ mal in der Kopflänge enthalten. Bei

erwachsenen Individuen ist jedoch häufig der letzte Dorsalstachel der höchste der Flosse und c. $2\frac{1}{3}$ — $2\frac{3}{4}$ mal in der Kopflänge enthalten.

Der gliederstrahlige Theil der Dorsale und Anale spitzt sich nach hinten zu; in der Dorsale ist der 5^{te}, in der Anale der 3^{te} Gliederstrahl am höchsten und häufig nur um $\frac{1}{2}$ —1 Augendiameter kürzer als der Kopf.

Die Spitze der Pectorale reicht in der Regel bis zur Analgrube und nur bei jungen Individuen zuweilen noch über diese hinaus. Die Flosse selbst ist durchschnittlich ein wenig kürzer, seltener ebenso lang wie der Kopf, und fast immer ein wenig kürzer als der fadenförmig verlängerte erste Gliederstrahl der Ventrals, dessen Spitze bis zur Basis des 3^{ten} Analstachels reicht.

Die Stacheln der Anale sind stärker als die schlanken Stacheln der Dorsale. Der 3^{te} längste Analstachel ist bei kleinen Exemplaren unbedeutend mehr als 2 mal, bei erwachsenen aber $2\frac{3}{4}$ mal in der Kopflänge enthalten.

Der obere Ast der Seitenlinie durchbohrt 17—19, der untere hintere Ast 9—11 Schuppen am Rumpfe und 3 auf der Caudale; zwischen dem oberen Ende der Kiemenpalte und der Basis der Caudale liegen 26—27 Schuppen. Die Schuppen sind äusserst zart gezähnt und die Zähnechen fallen so leicht ab, dass man die Schuppen durchschnittlich für ganzrandig halten möchte.

Die Schlundzähne an der Vorderseite des unteren Astes des ersten Kiemenbogens gleichen Fangzähnen mit compressen Kronen. Ihre Zahl beträgt 6—9, sie nehmen gegen den obersten am Länge zu und werden zugleich schlanker; an den Innenrand dieser Rechenzähne setzt sich eine ausgezackte Hautfalte an, die quer über den Kiemenbogen nach innen zieht. Die 5 Rechenzähne, am oberen Aste desselben Bogen sind äusserst schlank, fast naddelförmig und nehmen gegen den obersten Zahn ein wenig an Länge ab.

Ein rundliches, weiches, papillöses Schleimhaut-Polster liegt jederseits am Gaumen nächst der oberen Ansatzstelle

der Kiemenbogen und umschliesst mit dem der entgegengesetzten Seite die oberen Schlundknochen nach vorne.

Ein grosser dunkler, metallischblau glänzender Fleck liegt am hinteren Ende des Kiemendeckels und ist häufig von kleineren hellblauen Flecken umgeben, die sich in seltenen Fällen auch im ganzen übrigen Theile des Deckels vorfinden.

Rumpf mit 5 nicht scharf hervortretenden bräunlichen Querbinden, von denen die mittleren am breitesten sind. Im oberen Theile der von der Basis der letzten Stacheln und 2 ersten Gliederstrahlen der Dorsale herablaufenden Querbinde liegt ein grosser dunkelbrauner Fleck.

Caudale mit vertikalen, gliederstrahliger Theil der Dorsale mit schrägen, von hinten nach vorne und oben laufenden schmalen, abwechselnd blauvioletten und goldbraunen Binden oder Fleckenreihen.

Anale heller oder dunkler bläulichviolett und ungefleckt. Ventrals im äusseren Theile ähnlich gefärbt, im grösseren inneren Theile nach allmählichem Übergange gelblichgrau.

6 Exemplare, 8.4—18 Cent. lang, aus dem Duqueah-Flusse bei Hill Town, Junk-Flusse und den Bächen des Fischermann-Sees.

D. $\frac{16}{11-12}$. A. $\frac{3}{8}$. L. horiz. 26—27. L. tr. 3— $3\frac{1}{2}/\frac{1}{8}-12$.

47. *Paratilapia (Pelmatochromis) Jentinkii* n. sp.

2 Exemplare, von c. 21 und 29 Cent. Länge, aus dem Fischermann-See bei Buluma.

Im allgemeinen Habitus stimmt auch diese Art mit den *Chromis*-Arten überein und unterscheidet sich von *Parat. Büttikoferi* durch die viel geringere Zahl der Zahnreihen in den Kiefern, die überdies im Unterkiefer nur den gebogenen Vorderrand dieses Knochens einnehmen, durch die auffallend grössere Zahl der Schuppenreihen am Rumpfe (40 gegen 26—27), die verschiedene Körperzeichnung und endlich auch durch die noch bedeutendere Entwick-

lung eines mächtigen, weichen Schleimhaut-Polsters am Gaumen.

Die grösste Rumpfhöhe ist mehr als $2\frac{1}{3}$ — $2\frac{2}{3}$ mal, die Kopflänge c. 3 mal in der Körperlänge, der Augendiameter $3\frac{1}{2}$ - mehr als $3\frac{3}{4}$ mal, die mittlere Stirnbreite fast $3\frac{3}{4}$ - fast $3\frac{3}{4}$ mal, die Entfernung der vorderen, aufgetriebenen Augenränder von einander c. 3 mal, die Schnauzenlänge etwas mehr als $2\frac{1}{3}$ — $2\frac{1}{2}$ mal in der Körperlänge enthalten.

Die obere Profillinie des Kopfes fällt bei dem kleineren Exemplare etwas steiler als bei dem grossen zum vorderen Mundrand fast ohne Krümmung ab oder ist daselbst schwach concav; von der Stirne bis zur Dorsale erhebt sie sich schwach bogenförmig. Die Stirne ist querüber nur schwach convex, die vorderen Augenränder sind ein wenig verdickt, die Höhe des Präorbitale gleicht c. $\frac{3}{10}$ einer Kopflänge. Die grösste Länge des Präorbitale ist etwas geringer als die Länge des Auges. Das hintere Ende des Oberkiefers fällt bei dem kleineren Exemplare nur wenig, bei dem grösseren fast um $\frac{1}{3}$ einer Augenslänge vor den vorderen Augenrand.

Der Rand des Unterkiefers wird von dem des Zwischenkiefers umschlossen. 3 Zahnreihen vorne im Zwischenkiefer, seitlich 2 und zuletzt nur mehr 1 Zahnreihe. Die Zähne der Aussenreihe konisch, verhältnissmässig bedeutend länger und stärker als die äusserst kleinen Zähne der Innenreihen, die zwischen den Schleimhaut-Papillen versteckt liegen. Im Unterkiefer liegen bei beiden Exemplaren nur in dem vorderen oval gebogenen Theile desselben 2 Zahnreihen mit grösseren Zähnen in der Aussenreihe. Zwischen dem hinteren Rande des stark entwickelten, hohen Präorbitale und dem unteren Theile der Vorleiste des hinteren Deckelrandes liegen 6 schräge gestellte Schuppenreihen, zwischen dem hinteren Augenrande und dem oberen Theile des hinteren Vordeckelrandes nur eine einzige Schuppenreihe. Über der Vorleiste des unteren Vordeckelrandes bleibt ein dreieckiger Raum der unteren

Wangengegend bei den mir vorliegenden Exemplaren schuppenlos.

Vordeckelwinkel ein rechter mit stark gerundeter Spitze. Aufsteigender Rand des Vordeckels vertikal gestellt, viel länger als der untere, schwach convexe Rand. Präorbitale, Schnauze, Kiefer, Stirne und der zwischen der Vorleiste und den freien Rändern des Vordeckels gelegene Raum schuppenlos. Schuppen am Kiemendeckel von keiner auffallenden Grösse und leicht abfallend.

Rechenzähne am unteren Aste des ersten Kiemenbogens c. 12—13, von sehr mässiger Länge, gegen den obersten nur wenig an Grösse zunehmend, hackenförmig gebogen; an den Innenrand derselben legt sich der ganzen Höhe nach ein Hautlappen an, deren oberer Rand mehrfach ausgezackt ist.

In der hinteren Hälfte des gewölbten Gaumens liegt jederseits ähnlich wie bei *Catla Buchanani* ein auffallend grosses, weiches Schleimhautpolster, welches nach vorne in einen freien Lappen ausläuft, der unter und vor dem oberen Aste des ersten Kiemenbogens liegt. Die beiden papillösen Gaumenpolster grenzen nach hinten an die oberen Schlundknochen, die im inneren Theile mit dunkel goldgelben Pflasterzähnen, im äusseren Theile mit Spitzzähnen besetzt sind; sie sind ferner vorne durch ein kleines, schlankes medianes Schleimhaut-Pölsterchen von keilförmiger Gestalt von einander getrennt, dessen schneideartiger Kiel sich zwischen die oberen Schlundknochen einschiebt.

Bei *Parat. Büttikoferi* ist dieses paarige Gaumenpolster auffallend kleiner, an der Unterfläche etwas stärker gewölbt, fast eiförmig und nach vorne nicht in einen freirandigen Lappen ausgezogen. Eine schwache Andeutung eines Gaumenpolsters findet sich übrigens auch bei den *Chromis*-Arten, nicht aber bei den von mir untersuchten 3 Exemplaren von *Paratilapia Polleni* vor, daher ich *Parat. Büttikoferi* und *Parat. Jentinkii* zugleich auch mit Rücksicht auf die abweichende Form der kürzeren

Rechenzähne wenigstens als Repräsentanten einer besonderen Untergattung, *Pelmatochromis* betrachten möchte.

Die Stacheln der Dorsale sind schlank; sie nehmen von dem 1^{ten} bis zum 7^{ten} fast gleichförmig, mässig rasch, von dem 7^{ten} bis zum letzten nur ganz unbedeutend an Höhe zu. Bei dem grösseren Exemplare ist der letzte Dorsalstachel c. $2\frac{1}{2}$ mal, der höchste 7. oder 8. Gliederstrahl der Dorsale c. $1\frac{1}{2}$ mal in der Kopflänge enthalten.

Die Stacheln der Anale sind viel kräftiger als die der Dorsale; der 1^{te} Stachel ist sehr kurz, der 2^{te} $2\frac{2}{3}$ — $2\frac{3}{4}$ mal, der 3^{te} längste etwas weniger als 2 mal bei dem kleineren, $2\frac{1}{4}$ mal bei dem grösseren Exemplare, der schlanke Ventralstachel c. 2 mal in der Kopflänge enthalten.

Die Pectorale ist sehr lang, zugespitzt und c. $2\frac{3}{4}$ mal, der erste, in einen langen Faden ausgezogene Gliederstrahl der Ventrals c. $2\frac{1}{4}$ mal in der Körperlänge enthalten und c. 3 mal länger als der Ventralstachel.

Die Spitze der Pectorale fällt vertikal ein wenig vor den Beginn der Anale oder über die Basis des 3^{ten} Analstachels, die Spitze des 1^{ten} Gliederstrahles der Ventrals reicht c. bis zur Basis des 4^{ten} oder 5. Gliederstrahles der Anale.

Der obere vordere Ast der Seitenlinie durchbohrt 28—29 Schuppen, der untere hintere Ast, der vorne an der 13^{ten} Schuppe hinter dem Schultergürtelrande beginnt, 26—27 Schuppen am Rumpfe und löst sich an der Basis der Caudale in 3 Äste auf, von denen der mittlere zwischen dem 1. und 2. Caudalstrahle unter der Höhenmitte der Flosse hinzieht.

Die kleinsten Schuppen des Rumpfes liegen in der Brustgegend. Der Grösse nach reihen sich an diese zunächst die Schuppen der Bauchseite und der Nackengegend. Die grössten Schuppen nehmen den mittleren Theil des Rumpfes sowohl seiner Länge als Höhe nach ein. Gegen den Beginn der Caudale werden die Schuppen nur wenig kleiner und sind am Schwanzstiele noch bedeutend grösser als

die zunächst hinter dem Schultergürtel gelegenen Schuppen.

Die grösseren Schuppen an den Seiten der hinteren Rumpfhälfte sind am freien Rande so zart gezähnt, dass sich die Zähnen erst bei 80maliger Vergrößerung deutlich unterscheiden lassen. Die Schuppen am Kopfe so wie auch in der Brust-, Bauch- und Nackengegend dürften höchst wahrscheinlich stets ganzrandig, die Schuppen an den Seiten des Rumpfes dagegen bei frischen, wohl erhaltenen Exemplaren ausnahmslos mit äusserst zarten, leicht abfallenden Zähnen besetzt sein.

Grundfarbe des Körpers hell goldgelb (bei in Weingeist aufbewahrten Exemplaren). Zwischen je 2 auf einander folgenden horizontalen Schuppenreihen des Rumpfes liegt eine schmale Längsbinde, die in der oberen Rumpfhälfte bräunlich, in der unteren nach allmählichem Übergange nur intensiver gelb als die Grundfarbe der Körperseiten ist. Dorsale im stacheligen Theile mit 3, auf dem höheren, gliederstrahligen Theile mit 6 violetten, scharf abgegrenzten Längsstreifen, die fast parallel zur Flossenbasis laufen. Anale mit 6 schrägen violetten, minder scharf entwickelten Streifen, die von vorne und oben nach hinten und unten ziehen. Die Pectorale und Ventrale sind bei dem grösseren Exemplare insbesondere schmutzig bräunlichgelb mit einem Stiche ins Violette.

D. $13-14/17$. A. $3/8-9$. P. 16. V. $1/3$. L. hor. lat. 40. L. tr. $7\frac{1}{16}-18$.

48. *Hemichromis fasciatus* Pet.

Zahlreiche Exemplare, 3.3—20.2 Cent. lang, aus dem Junk- und St. Paul-Flusse, von Cape Mount, Robertsport und Sforeh Place.

Bei jungen Individuen von 7—8 Cent. Länge ist die grösste Rumpfhöhe mehr als $2\frac{1}{2}$ —3 mal, bei alten von 15—20 Cent. Länge. $2\frac{3}{4}$ — $2\frac{1}{2}$ mal, die Kopflänge $2\frac{1}{2}$ —mehr als $2\frac{3}{4}$ mal in der Körperlänge, das Auge bei jungen Individuen $3\frac{3}{4}$ — $3\frac{1}{2}$ mal, bei alten $4\frac{3}{4}$ — $5\frac{3}{4}$ mal,

Notes from the Leyden Museum, Vol. XVI.

die mittlere Stirnbreite, bei ersteren $3\frac{3}{4}$ —4 mal, bei letzteren $3\frac{2}{3}$ — $3\frac{3}{4}$ mal, die Schnauzenlänge bei jungen Exemplaren 3— $3\frac{1}{3}$ mal, bei erwachsenen $2\frac{3}{4}$ —nahezu 3 mal in der Kopflänge enthalten.

5—6 Längsschuppenreihen liegen zwischen dem Auge und dem unteren Rande des Vordeckels und 8—9 Schuppen zwischen den Mundwinkeln und dem hinteren Rande des Vordeckels. Die obere Hälfte der Seitenlinie durchbohrt 17—19, die untere hintere Hälfte 10—12 Schuppen am Rumpfe und 2—3 auf der Caudale. Zwischen dem oberen Ende der Kiemenspalte und der Basis der Caudale liegen 29—30 Schuppen in einer Längsreihe.

Die Spitze der Ventralen reicht bei alten Individuen bis zur Analmündung oder selbst bis zum Beginne der Anale, fällt aber bei jungen Exemplaren mehr oder minder weit vor die Analmündung. Die Länge der Ventralen ist daher bei letzteren 4— $4\frac{1}{2}$ mal, bei ersteren $3\frac{1}{2}$ bis weniger als 3 mal in der Körperlänge enthalten.

5 dunkle Querbinden am Rumpfe, die zur Rückenlinie und mit Ausnahme der 3 vorderen Binden auch zum unteren Körperrande reichen. Bei alten Individuen sind dieselben zuweilen im oberen Drittel der Rumpfhöhe fast erloschen, im mittleren Drittel dagegen sehr scharf ausgeprägt und intensiv braun gefärbt und auf den 4—5 mittleren Längsschuppenreihen des Rumpfes liegt auf jeder Schuppe zwischen den Querbinden ein ziemlich grosser, intensiv brauner Fleck. Viel schwächer der Grösse und Tiefe der Färbung nach sind die braunen Flecken auf den übrigen Schuppenreihen bis zur Rückenlinie hinauf entwickelt. Der dunkle Fleck am Kiemendeckel ist zuweilen oben und unten silberweiss oder metallischgrün gesäumt, fehlt aber bei ganz jungen Exemplaren.

Die beiden vordersten Zähne in der äusseren Zahnreihe des Zwischenkiefers fallen schon bei ganz jungen Individuen durch ihre Grösse auf.

D. $\frac{14}{12}$. A. $\frac{3}{6}$. L. tr. $3\frac{1}{2}$ / $\frac{1}{6}$ —10.

Vulgärname: Uo.

Notes from the Leyden Museum, Vol. XVI.

49. *Hemichromis bimaculatus* Gill.(= *H. auritus* Gill.).

Zahlreiche Exemplare von kaum 4—11½ Cent. Länge aus dem Junk-, Sulymah-, Du Queah-Flusse, aus den Bächen am Fischermann-See, von Buluma und Robertsport.

Die grösste Leibeshöhe ist bei den kleinen Exemplaren c. 2½ mal, bei den grösseren 2⅔—2¾ mal, die Kopflänge bei ersteren 2⅔-, bei letzteren 2⅝—2⅞ mal in der Körperlänge, das Auge bei ersteren 3½ mal, bei letzteren 4⅔—4¾ mal, die Schnauzenlänge bei jüngeren Individuen 3⅔ mal, bei älteren 3—2⅘ mal, die Stirnbreite bei ersteren 3½—3⅔ mal, bei letzteren mehr als 3⅔ mal, die Länge der Pectorale 1⅔—1¾ mal, die der Ventralen 1⅓—weniger als 1½ mal in der Körperlänge enthalten.

Das hintere Ende des Oberkiefers fällt unter den vorderen Augenrand. Die mittleren Zähne im Zwischenkiefer nur wenig länger als die nächststehenden. Der hintere Rand des Vordeckels ist vertikal gestellt, der hintere Winkel desselben ein rechter.

4 Längsreihen von Schuppen zwischen dem unteren Augenrand und der Vorleiste des unteren Randes des Vordeckels. Die Schuppen der untersten Reihe sind viel kleiner als die der übrigen Reihen, und die 4^{te} Reihe selbst ist um 1—2 Schuppen kürzer als die darüberliegenden Reihen. In der 2^{te} Wangenschuppenreihe liegen durchschnittlich 8 Schuppen.

Die Höhe des letzten Dorsalstachels ist bei kleinen Individuen 2¼ mal, bei erwachsenen c. 2¾ mal, der 5. und 6. höchste Gliederstrahl der Dorsale bei ersteren etwas mehr als 2 mal, bei letzteren 1¾ mal in der Kopflänge enthalten und nur wenig länger als der 4. und 5. höchste Gliederstrahl der Anale.

Der schwärzliche runde Fleck am Kiemendeckel ist scharf abgegrenzt. Der stets vorhandene, intensiv dunkelbraun gefärbte Rumpffleck liegt in der Regel unter dem 11. und

12. Dorsalstachel und grenzt nach oben an die 12 und 13 Schuppen des vorderen oberen Astes der Seitenlinie, erstreckt sich jedoch zuweilen noch über diese Schuppen hinaus. Ein 2^{ter} viel kleinerer dunkler Fleck oder Querstreif an der Basis der Caudale. Sowohl vor wie hinter dem grossen Rumpffleck bemerkt man noch zuweilen 2—3, oft nur sehr schwach angedeutete, mehr oder minder schmale oder selbst ziemlich breite Querbinden in der oberen Rumpfhälfte, die etwas dunkler gefärbt sind als der Rumpf.

Der obere Ast der Seitenlinie durchbohrt 17—18, der untere, hintere Ast 7—9 Schuppen.

D. $\frac{14}{10}$ —11. A. $\frac{3}{8}$. L. horiz. 25—27 (+ 1—2 auf d. C.). L. tr. $3\frac{1}{2}\frac{1}{8}$.

Meines Erachtens fällt *Hemichr. auritus* Gill. mit *H. bimaculatus* Gill. der Art nach zusammen, ich habe letzteren Artnamen beibehalten, da das Vorkommen eines Deckel- und eines Rumpffleckes für die Art charakteristisch ist und der Rumpffleck wohl nur in den seltensten Fällen, ausnahmsweise nicht zur Entwicklung kommt.

Pleuronectidae.

50. *Cynoglossus senegalensis* Kaup.

Ein Exemplar, 41 Cent. lang, von der Mündung des Messurado-Flusses.

Kopflänge c. $5\frac{1}{8}$ mal, Leibeshöhe unbedeutend weniger als 5 mal in der Körperlänge, Auge 8 mal, Abstand des oberen Auges von der Schnauzenspitze 3 mal, des unteren Auges von letzterer etwas mehr als $2\frac{2}{3}$ mal, Länge der Caudale fast $2\frac{1}{8}$ mal, Kopfhöhe am hinteren Kopfe 1 mal in der Kopflänge enthalten.

17 Schuppen zwischen der grössten Entfernung der beiden Seitenlinien am Rumpfe. Die Seitenlinie längs der Mitte der Rumpfhöhe durchbohrt von jener Stelle des Kopfes, an der sie einen vertikalen Ast zur oberen Sei-

tenlinie abgibt, bis zur Basis der Caudale auf der Augenseite des Körpers 127, auf der augenlosen Seite c. 114 Schuppen. Ventrals der rechten Körperseite mit 4, auf der linken mit 2 Strahlen.

D. 128. A. 104. C. 10.

51. *Hemirhombus guineensis* Blkr.

2 Exemplare, 18.3 und 25.1 Cent. lang, von Grand Cape Mount.

Leibeshöhe $2\frac{1}{3}$ - etwas mehr als $2\frac{1}{2}$ mal, Kopflänge etwas weniger als 4 mal (c. $3\frac{2}{3}$ m.) in der Körperlänge, Augendiameter $4\frac{1}{2}$ — $4\frac{3}{4}$ mal, Schnauzenlänge c. 5 mal, Länge der Pectorale $1\frac{1}{2}$ mal, die der Ventrals genau oder etwas weniger als 3 mal, Länge der Caudale c. $1\frac{1}{3}$ - mehr als $1\frac{1}{3}$ mal in der Kopflänge enthalten.

Die Breite der halbrinnenförmig ausgehöhlten, beschuppten Stirne ist bei dem kleineren Exemplare etwas weniger als 4 mal, bei dem grösseren c. 3 mal in der Augenslänge enthalten.

Das untere Auge überragt das vordere nur ganz unbedeutend nach vorne. Das hintere Ende des Oberkiefers fällt genau unter oder ein wenig hinter die Augenmitte.

2 Zahnreihen im Zwischen- und eine Zahnreihe im Unterkiefer. Die Zwischenkieferzähne der Aussenreihe nehmen mit Ausnahme der 2—3 vordersten, die rascher an Grösse zunehmen, ganz gleichförmig und wenig gegen das vordere Knochenende an Grösse zu.

Längs der fast horizontal verlaufenden Seitenlinie liegen 56—60 Schuppen auf der linken wie auf der rechten Körperseite; 16 Schuppen über und 18 unterhalb der Seitenlinie in der grössten Rumpfhöhe. 11 Strahlen in der längeren, zugespitzten linken, und 10 in der rechten Pectorale.

D. 83—84. A. 69—70. V. 6. C. 17.

52. *Hemirhombus Stampflii* n. sp.

2 Exemplare, 6.3 und 12.6 Cent. lang, (das kleinere entschuppt), von Grand Cape Mount.

Der vordere Rand des oberen Auges überragt ein wenig den des unteren Auges. Augen kleiner als bei *H. guineensis* Blkr.; beide Augen nur durch eine zarte, vorspringende Leiste von einander getrennt.

Die Kopflänge ist $3\frac{2}{3}$ - etwas mehr als $3\frac{3}{4}$ mal (bei dem grösseren Exemplare), die grösste Rumpfhöhe $2\frac{1}{3}$ — $2\frac{1}{2}$ mal, der Augendiameter c. $4\frac{1}{2}$ — $5\frac{3}{4}$ mal, Abstand des unteren Auges von dem vorderen Ende des Zwischenkiefers 5- ein wenig mehr als 5 mal, Länge der linken Pectorale 2— $1\frac{5}{6}$ mal, die der rechten Brustflosse $2\frac{1}{4}$ — $2\frac{1}{2}$ mal, Caudale c. $1\frac{1}{2}$ mal, in der Körperlänge enthalten.

Das hintere Ende des Oberkiefers fällt vertikal unter die Mitte des unteren Auges. Bezahnung der Kiefer wie bei *H. guineensis*. Caudale am hinteren Rande stark gerundet.

Die Pectorale der Augenseite mit 11, die der augenlosen Körperseite mit 10 Strahlen; Ventrale 6strahlig.

D. 81. A. 62. L. l. 47. L. tr. $17\frac{1}{16}$ —19.

Dorsale und Anale braun gesprenkelt. Längs der Seitenlinie 3—4 kleine, unregelmässige und stark verschwommene Flecken längs der Seitenlinie; der letzte derselben liegt am hinteren Rumpfende und ist intensiver braun gefärbt, daher auch schärfer hervortretend als die 2—3 vorderen Fleckchen. Ein grosser verschwommener brauner Fleck in der oberen Rumpfhälfte ein wenig hinter der Mitte der Rumpflänge.

Siluridae.53. *Clarias Salae* Hubr.

4 Exemplare, 18, 22.6, 22.2 und $43\frac{1}{2}$ Cent. lang, aus

Notes from the Leyden Museum, Vol. XVI.

dem St. Paul-Flusse, Junk-Flusse und Du Queah-Fluss bei Hilltown.

Die Zahnbinde am Vomer in der Mitte ebenso breit wie Zahnbinde am Zwischenkiefer.

Vomerzähnnchen stumpf konisch. Dorsale und Anale mit der Caudale nur durch einen sehr niedrigen Hautsaum verbunden.

Kopflänge c. $4\frac{1}{3}$ - mehr als $5\frac{2}{3}$ mal, Leibeshöhe $9\frac{1}{3}$ - fast 11 mal in der Körperlänge, Stirnbreite $2\frac{1}{2}$ — $2\frac{2}{3}$ mal, Augendiameter 11—18 mal, Pectorale $1\frac{3}{4}$ — $7\frac{1}{8}$ mal in der Kopflänge enthalten.

Der Occipitalfortsatz bildet nach hinten bei dem grössten Exemplare einen rechten Winkel; bei den jüngeren Individuen ist der Winkel merklich kleiner. Oberseite des Kopfes fein granulirt. Pectoralstachel kurz, kräftig, an beiden Rändern mit Hackenzähnen besetzt.

Nur bei dem grössten Exemplare liegen gelbe Fleckchen in regelmässigen Querreihen an den Seiten des Rumpfes.

D. 93—89. A. 78—73.

54. *Clarias Büttikoferi* n. sp.

1 Exemplar, $15\frac{1}{2}$ Cent. lang, von Buluma.

Letzter Dorsal- und Analstrahl bis zu seiner Spitze mit der Caudale vereinigt.

Occipitalfortsatz nach hinten in einen spitzen Winkel ausgezogen. Oberseite des Kopfes nahezu glatt. Kopf vorne oval gerundet, an der Oberseite querüber nahezu flach; Seiten des Kopfes gewölbt. Fontanelle am Occipitale oval, etwas mehr als 2 mal kürzer als die gestreckte Stirnfontanelle.

Zahnbinde des Vomers ohne hinteren Fortsatz und im mittleren Theile ebenso breit wie die des Zwischenkiefers. Vomerzähnnchen stumpf konisch. Die Nasalbarteln reichen zurückgelegt c. zur Längenmitte der Pectorale, während die Maxillarbarteln noch ein wenig über die Spitze der Pectorale hinausreichen.

Die äusseren Unterkieferbarteln sind etwas länger als die inneren, und reichen zurückgelegt nicht bis zur Spitze der Brustflossen. Pektoralstachel kurz, kräftig, schwach gebogen und nur am Innenrande gezähnt.

Kopflänge 4 mal, Leibeshöhe $6\frac{1}{3}$ mal in der Körperlänge, Augendiameter 12 mal, Stirnbreite etwas mehr als 2 mal, Mundbreite 2 mal, Kopfbreite etwas weniger als $1\frac{1}{3}$ mal, grösste Kopfhöhe etwas weniger als 2 mal, Länge der Pectorale c. $1\frac{1}{6}$ mal, Länge des Pektoralstachels c. $2\frac{2}{3}$ mal in der Kopflänge enthalten.

Der Beginn der Anale ist ebenso weit von der Basis der Caudale wie vom hinteren Augenrande entfernt. Die Spitze der Ventralen reicht bis zur Basis des 2^t oder 3^{ten} Analstachels zurück; die Länge der Ventrals gleicht $\frac{1}{3}$ der Kopflänge. Rumpf dunkel röthlichbraun.

P. $\frac{1}{6}$. D. 55. A. c. 50.

55. *Clarias liberiensis* n. sp.

Viele Exemplare, 6—18 Cent. lang, von Buluma und aus dem Junk-Flusse.

Dorsale und Anale mit der Caudale nicht verbunden. Zahnbinde am Vomer bogenförmig gekrümmt, ohne hinteren Fortsatz und ebenso breit wie die des Zwischenkiefers. Vomerzähne minder spitz als die Zähne des Zwischenkiefers.

Kopf an der Oberseite flach, sehr zart granulirt, und mit einer dünnen, beweglichen Haut überzogen.

Stirn- und Occipital-Fontanelle mehr oder minder schmal, erstere mindestens 2 mal länger als letztere, zuweilen fast linienförmig.

Kopflänge $4\frac{1}{4}$ — $4\frac{2}{3}$ mal, Leibeshöhe 7— $6\frac{1}{3}$ mal in der Körperlänge, Stirnbreite 2— $2\frac{1}{6}$ mal, Breite der Mundspalte 2 mal, Schnauzenlänge fast 4— $3\frac{1}{2}$ mal, Augendiameter 12—14 mal, grösste Kopfbreite $1\frac{1}{3}$ — $1\frac{2}{7}$ mal, Länge der Pectorale c. $1\frac{1}{3}$ —2 mal, Länge der Ventrals etwas mehr als $2\frac{1}{2}$ — $2\frac{2}{3}$ mal, die Länge der Caudale $1\frac{1}{2}$ — $1\frac{1}{6}$ mal in der Kopflänge enthalten.

Notes from the Leyden Museum, Vol. XVI.

Der Occipitalfortsatz bildet nach hinten einen spitzen Fortsatz und ist ebenso breit an der Basis wie lang.

Das Nasalbartel reicht zurückgelegt bis in die Nähe des hinteren Deckelrandes oder bis zu diesem, das Maxillarbartel nahezu bis zur Spitze der Pectorale oder noch über diese hinaus, das äussere Unterkieferbartel genau bis zur Längenmitte der Pectorale oder noch ein wenig weiter zurück und das innere in der Regel bis zur Basis der Pectorale.

Der Aussenrand der Pectorale trägt nur sehr stumpfe zahnartige Vorsprünge, während der Innenrand derselben mit deutlich entwickelten Hackenzähnen besetzt ist. Das hintere Ende der Pectorale fällt bei den kleineren Exemplaren in vertikaler Richtung genau unter den Beginn der Dorsale, bei dem grössten aber vor diesen. Die Einlenkungsstelle der Ventrals liegt durchschnittlich $2\frac{1}{2}$ mal näher zur Spitze des Occipitalfortsatzes als zur Basis der Caudale.

Bei dem grössten Exemplare ist der freie Rand der Dorsale und der Anale hell gesäumt, und unter, resp. über diesem Saume zieht sich eine dunkle Linie hin. Eine ähnliche dunkelbraune Linie liegt beiläufig in der Längenmitte der Caudale, zu deren freiem Rande sie parallel läuft. Bei dem übrigen kleineren Exemplaren fehlt die dunkle Linie auf der Dorsale und Anale ausnahmslos, während sie auf der Caudale zuweilen schwach angedeutet ist.

Rumpf in der Regel dunkelbraun, Flossen grauschwarz. Das grösste Exemplar zeigt eine hellere Färbung am Rumpfe wie auch auf den Flossen.

D. 68—63. A. 55—c. 49. P. $\frac{1}{2}$.

56. *Clarias bulumae* n. sp.?

1 Exemplar, 16 Cent. lang, von Buluma.

Es unterscheidet sich von gleichgrossen Exemplaren der früher beschriebenen Art nur durch die auffallend gedrungene Körperform und durch die etwas geringere Zahl der

Analstrahlen, stimmt aber in den übrigen Merkmalen mit *Clar. liberiensis* überein, daher ich es nur? als Repräsentant einer besonderen Art hinzustellen wage.

Occipitalfortsatz spitz dreieckig. Zahnbinde am Vomer im mittleren Theile ebenso breit wie die des Zwischenkiefers, ohne hinteren Fortsatz. Vomerzähne stumpfer als die Zwischenkieferzähne; Oberseite des Kopfes dünn überhäutet, zart granulirt. Dorsale und Anale nicht mit der Caudale verbunden.

Leibeshöhe $5\frac{1}{2}$ mal, Kopflänge 4 mal in der Körperlänge, Schnauzenlänge c. $4\frac{1}{2}$ mal, Augenlänge 14 mal, Stirnbreite etwas mehr als 2 mal, Mundbreite zwischen den Mundwinkeln etwas weniger als $2\frac{1}{2}$ mal, grösste Kopfbreite c. $1\frac{1}{4}$ mal, Länge der Pectorale 2 mal, Länge des steifen Theiles des Pektoralstachels $2\frac{1}{2}$ mal, Länge der Ventrals $2\frac{3}{4}$ mal und die der Caudale c. mehr als $1\frac{1}{2}$ mal in der Kopflänge enthalten.

Das Nasalbartel reicht bis zur Basis, das Maxillarbartel bis zur hinteren Spitze der Pectorale, und das innere Unterkieferbartel ein wenig über die Basis der Brustflossen zurück. Das äussere Unterkieferbartel ist nur wenig kürzer als der Bartfaden am Oberkiefer.

Der Occipitalfortsatz bildet nach hinten einen spitzen Winkel und ist an der Basis ebenso breit wie lang; die Stirnfontanelle ist 2 mal so lang wie die Fontanelle am Occipitale und schmal.

Der Aussenrand des starken Pektoralstachels ist nur mit wenigen, sehr stumpfen Zähnen besetzt, der innere Rand desselben mit zahlreicheren spitzen Hackenzähnen.

Der Beginn der Ventrals liegt etwas mehr als 2 mal näher zur Spitze des Occipitalfortsatzes als zur Basis der Caudale. Die Spitze der Pectorals fällt in vertikaler Richtung unter den Beginn der Dorsals und die der Ventrals erreicht die Basis des 2^{ten} Analstrahles.

Rumpf und Flossen röthlichbraun, etwas dunkler in der oberen als in der unteren Höhenhälfte des Rumpfes.

D. 62. A. 44. P. $\frac{1}{2}$.

Notes from the Leyden Museum, Vol. XVI.

57. *Eutropius mandibularis* Gthr.

4 Exemplare, c. 14, 19, $21\frac{1}{2}$ und 23 Cent. lang, vom Farmington-Flusse.

Obere Profilinie in der Stirngegend sehr schwach concav und längs dem langen Occipitalfortsatze bis zum Beginn der Dorsale nur äusserst schwach convex oder nicht gebogen.

Die grösste Rumpfhöhe ist $3\frac{2}{3}$ —c. $4\frac{1}{3}$ mal, die Kopflänge bis zum hinteren Deckelrande c. 5 — $5\frac{1}{3}$ mal in der Körperlänge, die Länge des Auges $4\frac{2}{3}$ —4 mal, die Stirnbreite nächst den vorderen Augenrändern c. 2 mal, die Länge der Schnauze 3 — $2\frac{3}{4}$ mal, die Breite der Mundspalte durchschnittlich etwas mehr als 2 mal, die Länge derselben 4- fast $4\frac{2}{3}$ mal, die Länge des Nasalbartels c. $1\frac{3}{4}$ —2 mal, die des Maxillarbartels mehr als $1\frac{2}{3}$ — $1\frac{1}{4}$ mal, die Länge des äusseren Unterkieferbartels $1\frac{1}{3}$ — $1\frac{2}{3}$ mal, die Länge des inneren $4\frac{1}{2}$ —5 mal in der Kopflänge enthalten. Die grösste Kopfbreite gleicht der Kopflänge mit Ausschluss der Schnauze.

Der vordere Rand des Unterkiefers wird nur sehr wenig von dem des Zwischenkiefers überragt.

Die Einlenkungsstelle der Ventrale fällt in vertikaler Richtung um $\frac{1}{2}$ — $\frac{2}{3}$ Augenlänge hinter die Basis des letzten Dorsalstrahles.

Die grösste Höhe der Dorsale sowie die Länge der Pectorale gleicht einer Kopflänge.

Der Stachel der Pectorale ist stärker als der der Dorsale und endigt in eine häutige Spitze, die ein wenig über die Einlenkungsstelle der Ventrale zurückreicht, der Pectoralstachel ist am inneren Rande mit Hackenzähnen besetzt.

Die Spitze der Ventrale reicht bis zur Basis des 6.—7. Analstrahles.

D. $\frac{1}{6}$. V. 6. P. $\frac{1}{10}$. A. 52—59.

58. *Eutropius altipinnis* n. sp.

3 Exemplare, 20—35 Cent. lang, aus dem St. Paul-Flusse bei Soforeh-Place.

Notes from the Leyden Museum, Vol. XVI.

Die obere Profillinie des Kopfes erhebt sich bis zum Beginn des Hinterhauptes nur mässig; sie ist längs der Schnauze schwach convex, in der Stirngegend schwach concav. Längs des Hinterhauptskammes steigt sie hierauf viel bedeutender bis zum Beginn der Dorsale an und ist zugleich bogenförmig gekrümmt. Der Zwischenkiefer überragt den Vorderrand des Unterkiefers.

Die grösste Leibeshöhe ist etwas weniger als $4-3\frac{1}{2}$ mal, die Kopflänge etwas mehr als 5- mehr als $4\frac{2}{3}$ mal, die Höhe des Dorsalstachels mit Einschluss seines oberen häutigen Endstückes $3\frac{3}{4}-4$ mal, die Länge der Pectorale etwas mehr als $4-4\frac{1}{4}$ mal in der Körperlänge, der Augendiameter $3\frac{2}{3}$ - fast 4 mal, die Stirnbreite $2\frac{2}{3}$ - mehr als $2\frac{1}{3}$ mal, die Länge der Mundspalte c. $3\frac{1}{3}-3\frac{2}{3}$ mal, die Breite derselben $2\frac{1}{4}-2$ mal, die Länge des Nasalbartels $3\frac{1}{3}-4\frac{1}{4}$ mal, die des Maxillarbartels c. $1\frac{1}{3}-1\frac{1}{2}$ mal, die des äusseren Unterkieferbartels $2\frac{1}{4}-2\frac{2}{3}$ mal, die des inneren $5\frac{2}{3}-4\frac{2}{3}$ mal, die Basislänge der Dorsale $3-3\frac{1}{3}$ mal in der Kopflänge enthalten. Das Nasalbartel ist somit 2—3 mal kürzer als das Maxillarbartel. Durch diese Eigenthümlichkeit so wie durch die Länge der Mundspalte unterscheidet sich diese Art wesentlich von *Eutr. mandibularis* Gthr.

Von *Eut. Adansonii* Val. unterscheidet sich *Eut. altipinnis* weniger durch die Höhe der Dorsale als durch die auffallende Länge der Pectorale, deren Spitze bei letzterer Art die Einlenkungsstelle der Ventralen bedeutend überragt, ferner durch das Vorkommen von 10 getheilten Pektoralstrahlen und die Länge der Mundspalte.

Der Stachel der Pectorale ist bei *Eutr. altipinnis* kräftiger als der der Dorsale und am Innenrande etwas stärker gezähnt als der Dorsalstachel am hinteren Rande.

Die Einlenkungsstelle der Ventrals fällt in vertikaler Richtung unter oder ein wenig hinter die Basis des letzten Dorsalstrahles.

Der 5. oder 6^{te} höchste Analstrahl ist c. $3-3\frac{1}{3}$ mal höher als der letzte und c. $1\frac{2}{3}-1\frac{3}{4}$ mal in der Kopflänge enthalten.

Notes from the Leyden Museum, Vol. XVI.

Die grössere hintere Hälfte der Pectorale, die äussere der Ventrals, der obere Theil der Dorsale und die grössere untere Hälfte der Anale sind schwärzlichgrau punktirt.

Humeralfleck gross, stark verschwommen.

Die Seiten des Rumpfes sind bis in die Nähe des Rückens hell silberweiss, und nicht dunkel punktirt.

D. $\frac{1}{6}$. P. $\frac{1}{10}$. A. 56—59.

Vulgärname: Fada.

Die von Professor Hubrecht als *Eutr. Adansonii* bestimmten Exemplare sind die Typen dieser Art.

59. *Eutropius liberiensis* Hubr.

1 Exemplar, c. $15\frac{1}{2}$ Cent. lang, aus dem St. Paul-Flusse.

Unterseite des Kopfes und sämtliche Barteln durch Rost beschädigt.

Rumpfhöhe $4\frac{2}{3}$ mal, Kopflänge c. $4\frac{1}{3}$ mal, Pectorale etwas mehr als $4\frac{3}{4}$ mal in der Körperlänge, Augendiameter c. $3\frac{2}{3}$ mal, Länge der Mundspalte $3\frac{2}{3}$ mal, Breite derselben etwas weniger als 2 mal, Höhe der Dorsale ein wenig mehr als 1 mal in der Kopflänge enthalten. Die Spitze der Pectorale überragt die Einlenkungsstelle der Ventrals. Die obere Profillinie des Kopfes erhebt sich ohne Krümmung bis zum Beginn der Dorsale.

Die dunklen Längsbinden des Rumpfes sind nicht mehr deutlich sichtbar. Seiten des Rumpfes und die Anale ihrer ganzen Höhe nach sehr zart und dicht braun punktirt.

D. $\frac{1}{3}$. P. $\frac{1}{10}$. A. 50.

60. *Chrysichthys nigrodigitatus* sp. Lac.

6 Exemplare, 15.5 bis nahezu 26.5 Cent. lang, aus dem St. Paul-Flusse bei Soforeh Place.

Kopflänge durchschnittlich $3\frac{1}{3}$ mal, Leibeshöhe c. $4\frac{1}{2}$ —4 mal, höchster Gliederstrahl der Dorsale $3\frac{2}{3}$ — $2\frac{1}{3}$ mal in der Körperlänge, Länge der Schnauze $2\frac{1}{3}$ — $2\frac{1}{2}$ mal,

Notes from the Leyden Museum, Vol. XVI.

Augendiameter 3-, 4-, $4\frac{2}{3}$ mal (bei dem grössten Exemplare) in der Kopflänge enthalten. Dorsalstachel bis zu seiner äussersten, biegsamen Spitze c. um $\frac{1}{2}$ Augenlänge kürzer als der Kopf, während der steife Theil desselben bei dem kleinsten Exemplare $1\frac{1}{3}$ mal, bei dem grössten $1\frac{2}{3}$ mal in der Kopflänge enthalten, somit um c. $1-1\frac{1}{2}$ Augenlängen kürzer als der Kopf ist.

Der Kopf verschmälert sich nach vorne, die Schnauze überragt nicht unbedeutend, stumpf nasenförmig den oberen Mundrand. Die Zahnbinde des Zwischenkiefers fällt grossentheils vor den Rand des Unterkiefers.

61. *Chrysichthys Büttikoferi* n. sp.

1 Exemplar, $20\frac{1}{2}$ Cent. lang, aus dem Fischermann-See.
D. $\frac{1}{6}$. A. 13, P. $\frac{1}{6}$. V. 6.

Sehr nahe verwandt mit *Chrysichthys macrops* Gthr., doch ist die Stirne und die Hinterhauptsgegend querüber gewölbter, der Kopf im hinteren Theile stärker comprimirt, die Basislänge der Fettflosse geringer und die Zahl der Analstrahlen grösser als bei *Chrys. macrops*.

Die grösste Rumpfhöhe ist nahezu 5 mal, die Kopflänge c. $3\frac{1}{2}$ mal, die Höhe des längsten 2^{ten} gespaltenen Dorsalstrables c. 3 mal, der obere längere der beiden schlanken, stark zugespitzten Caudallappen etwas mehr als $2\frac{3}{4}$ mal in der Körperlänge, die Augenlänge 4 mal, die Stirnbreite zwischen den oberen Augenrändern 3 mal, die Breite des knöchernen Theiles der Stirne nahezu $4\frac{1}{2}$ mal, die Schnauzenlänge mehr als $2\frac{3}{4}$ mal, die grösste Kopfbreite $1\frac{1}{2}$ mal, die Kopfhöhe unter der Spitze des Occipitalfortsatzes weniger als $1\frac{2}{3}$ mal in der Kopflänge enthalten.

Die Oberseite des Kopfes ist mit Ausnahme der Schnauze dicht, ziemlich zart granulirt, der Occipitalfortsatz kaum länger als breit, dreieckig.

Der Kopf verschmälert sich mässig nach vorne. Die obere Profillinie desselben fällt in der Schnauzengegend

Notes from the Leyden Museum, Vol. XVI.

viel rascher nach vorne ab, als sie sich von der Stirne an zur Dorsale erhebt. Die Schnauze ist querüber gewölbt, am vorderen Rande oval gerundet, sie überragt nur wenig die breite Mundspalte.

Die Mundspalte ist unterständig, querüber sehr schwach gerundet; ihre Breite zwischen den Mundwinkeln gleicht $\frac{2}{3}$ der Kopflänge. Die Gaumenzähne liegen in 2 kleinen ovalen, weit von einander getrennten Gruppen. Kiemen-deckel radienförmig gestreift. Die Spitze der zurückgelegten Oberkieferbarteln erreicht nicht ganz das obere Ende der Kiemenspalte. Die Nasalbarteln sind äusserst zart, c. halb so lang wie das Auge; die äusseren, längeren der Unterkieferbarteln halb so lang wie der Kopf.

Der steife Theil des Dorsalstachels ist $1\frac{1}{3}$ mal, der des Pectoralstachels c. $1\frac{3}{4}$ mal in der Kopflänge enthalten. Beide Stacheln sind am hinteren, resp. inneren Rande mit Hackenzähnen bewaffnet. Die Spitze der zurückgelegten längsten Dorsalstrahlen erreichen den Beginn der Fettflosse, welcher in vertikaler Richtung ein wenig hinter dem der Anale liegt. Die Basis der Anale ist $1\frac{2}{3}$ mal länger als die der Fettflosse.

Rücken chocoladbraun, gegen die Bauchseite allmähig ins Silbergraue übergehend.

62. *Arius Parkii* Gthr.

3 Exemplare, 17, 20.5 und 24.3 Cent. lang, von Grand Cape Mount.

Leibeshöhe $5\frac{2}{3}$ — $5\frac{1}{2}$ mal, Kopflänge $3\frac{3}{4}$ —nahezu 4 mal, Länge des oberen Caudallappens $4\frac{1}{6}$ — $4\frac{1}{8}$ mal in der Körperlänge, Augendiameter $4\frac{3}{4}$ —nahezu 6 mal, Schnauzenlänge fast $2\frac{1}{4}$ —, $2\frac{3}{4}$ —, 3 mal, Entfernung der oberen Augenränder von einander etwas mehr als 2 mal, Breite des knöchernen Theiles der Stirne unbedeutend mehr als 3 mal in der Kopflänge enthalten.

Occipitalfortsatz mit scharf vortretender, medianer Leiste, gestreckt dreieckig, an der Basis ebenso breit wie lang.

Notes from the Leyden Museum, Vol. XVI.

Die Zahnbinden am Gaumen nehmen mit dem Alter nicht unbedeutend an Umfang zu; sie sind bei kleineren Exemplaren schmaler, oval, bei grösseren breiter, stärker gerundet.

Stachel der Pectorale ebenso lang oder ein wenig länger als der der Dorsale, um c. eine halbe oder ganze Augenslänge kürzer als der Kopf und gleich dem der Dorsale an beiden Rändern mit Hackenzähnen bewaffnet.

D. $\frac{1}{2}$. A. 20. P. $\frac{1}{11}$.

63. *Malapterurus electricus* Lac.

3 Exemplare, 17.8, 21 und 31.3 Cent. lang, aus dem St. Paul-Flusse bei Soforeh Place und von Grand Cape Mount.

Die Kopflänge ist bei jedem der 2 kleineren Exemplare $4\frac{1}{2}$ mal, bei dem grössten $4\frac{3}{4}$ mal in der Körperlänge, der Augendiameter bei ersteren $2\frac{1}{2}$ - fast $2\frac{1}{4}$ mal, bei letzteren aber $3\frac{1}{2}$ mal in dem Abstände des Auges von dem oberen Ende der Kiemenspalte enthalten. Die beiden Kiefer reichen gleich weit nach vorne.

Kopf und Rumpf mit grösseren und kleineren, intensiv dunkelbraunen Flecken unregelmässig gesprenkelt. Ein breiter heller Saum am freien Rande der Caudale und der Anale, welche letztere 10 Strahlen enthält.

Characinidae.

64. *Hydrocyon Forskålii* Cuv.

2 Exemplare, c. 20 und 26 Cent. lang, aus dem St. Paul-Flusse.

Leibeshöhe 4- mehr als $4\frac{1}{3}$ mal, Kopflänge $3\frac{2}{3}$ — $3\frac{4}{5}$ mal in der Körperlänge, Augendiameter $4\frac{2}{5}$ — $4\frac{1}{3}$ mal, Schnauzenlänge $2\frac{3}{4}$ - etwas weniger als 3 mal, Stirnbreite nahezu 4— $3\frac{3}{4}$ mal in der Kopflänge enthalten. Unterhalb der Seitenlinie liegen $4\frac{1}{2}$ Schuppen bis zur Bauchlinie

Notes from the Leyden Museum, Vol. XVI.

und 2 bis zur Flügelschuppe der Ventrals, ferner 7 Schuppen über der Seitenlinie bis zur Dorsale.

Ein brauner Streif längs der Höhenmitte jeder horizontalen Schuppenreihe des Rumpfes.

R. br. 4. D. 10. A. 14—15. L. 1. 43—45 (+ 2 auf d. C.).

65. *Sarcodaces odoë* sp. Bl.

3 Exemplare, 14½, 15 und 31.7 Cent. lang, aus den Bächen des Fischermann-Sees und aus dem Junk-Flusse.

Kopflänge genau oder ein wenig mehr als 3 mal, Leibeshöhe 6½—6 mal bei jungen Exemplaren, 4⅓ mal bei alten Individuen in der Körperlänge, Augendiameter 5-nahezu 6 mal, Schnauzenlänge 2¾- fast 3 mal, Stirnbreite mehr als 3⅓—3 mal in der Kopflänge enthalten.

Das hintere Ende des Oberkiefers fällt in vertikaler Richtung genau unter oder bei erwachsenen Exemplaren fast um ⅓ einer Augenzlänge hinter den hinteren Augenrand.

R. br. 4. D. 9. A. 12. P. 17—15. L. 1. 52—50 (+ 4 auf d. C.). L. tr. 8½¼ bis z. V.

66. *Alestes (Brycinus) macrolepidotus* C. V.

4 Exemplare, 10.8, 15.2, 29.5 und 31.5 Cent. lang, aus dem St. Paul-Flusse.

Bei den 2 kleineren Exemplaren ist die Leibeshöhe 3—3⅓ mal, bei den 2 grösseren 2¾- fast 2⅔ mal in der Körperlänge, der Augendiameter bei ersteren mehr als 2⅔ mal, bei letzteren c. 3⅓ mal, die Schnauze 3—2⅔ mal, die Stirnbreite fast 2½ bis unbedeutend mehr als 2 mal in der Kopflänge enthalten. Die Seitenlinie durchbohrt 22—24 Schuppen, von denen die 2—3 letzten auf der Basis der Caudale liegen. 4 Zähne jederseits in der Aussenreihe des Unterkiefers, 5 in der des Zwischenkiefers.

D. 10. A. 15—16. L. tr. 4½½ bis z. V.

Notes from the Leyden Museum, Vol. XVI.

67. *Alestes (Brachyalestes) longipinnis* Gthr.

5 Exemplare, 7—8.6 Cent. lang aus dem St. Paul-Flusse, Soforeh Place und 2 Exemplare, 10.8—12 Cent. lang aus dem Junk-Flusse.

Bei den 5 kleineren Exemplaren ist der Rumpf auffallend stärker comprimirt als bei den 2 grösseren, doch stimmen erstere mit letzteren in der Zahl der Schuppen und Flossenstrahlen so wie in der relativen Länge des Kopfes und der Rumpfhöhe überein.

Die Leibeshöhe ist genau oder etwas weniger als 3 mal, die Kopflänge $3\frac{1}{2}$ — $3\frac{2}{3}$ mal in der Körperlänge, das Auge bei den kleineren Exemplaren $2\frac{2}{3}$ - etwas weniger als 3 mal, bei den grösseren $2\frac{3}{4}$ — $3\frac{1}{4}$ mal, die Stirnbreite 3- mehr als $2\frac{2}{3}$ mal, bei den älteren Exemplaren $2\frac{2}{3}$ mal in der Kopflänge enthalten.

Das hintere Ende des Oberkiefers fällt unter oder unbedeutend vor den vorderen Augenrand. Der Beginn der Dorsale liegt ganz genau in der Mitte der Körperlänge, bei jüngeren Exemplaren öfter ein wenig näher zur Basis der Caudale als zum vorderen Kopfende, und fällt in vertikaler Richtung stets ein wenig hinter die Einlenkungsstelle der Ventralen. Der 3. oder 4. höchste Dorsalstachel erreicht durchschnittlich ein Kopflänge.

Die Spitze der zurückgelegten Pectoralen reicht bei jüngeren Exemplaren fast bis zur Einlenkungsstelle der Ventralen zurück, fällt aber bei grösseren c. um 2 Schuppenlängen vor diese, die Spitze der Ventralen reicht bei ersteren bis zum Beginn der Anale, bei letzteren bis zur Analmündung.

Die Anale wird von 21—24 Strahlen gebildet.

Der grosse ovale oder bindenförmige, dunkelbraune Fleck am Schwanzstiele nimmt c. die Länge von 5 Schuppen und die Höhe 2^{er} Schuppen ein und setzt sich über die mittleren Strahlen der Caudale bis zum hinteren Flossenrande fort; nach vorne verliert er sich in einem nicht

Notes from the Leyden Museum, Vol. XVI.

scharf abgegrenzten silbergrauen Längsstreif, der gegen das hintere Kopfbende hinzieht.

25—26 Schuppen längs der Seitenlinie, die hinter der Anale auf der untersten seitlichen Schuppenreihe des Rumpfes verläuft.

Bei den von Dr. Günther beschriebenen Exemplaren von Sierra Leone und aus dem Congo ist die Körperhöhe bedeutend beträchtlicher als bei den mir zur Untersuchung vorliegenden Exemplaren und $2\frac{2}{3}$ — $2\frac{3}{4}$ mal in der Körperlänge enthalten; da ich jedoch keine weiteren erheblichen Unterschiede vorfinde, glaube ich letztere nur für schlankere Formen von *Alestes longipinnis* halten zu dürfen.

D. 10. A. 21—24. V. 8. L. 1. 25—26. L. tr. $5\frac{1}{2}$ bis zur V.).

Mormyridae.

68. *Mormyrops deliciosus* sp. Leach.

6 Exemplare, $30\frac{1}{2}$ —53 Cent. lang, aus dem St. Paul-Flusse.

Kopflänge genau oder nahezu 4 mal, grösste Rumpfhöhe bei jüngeren Individuen 6 mal, bei älteren c. $5\frac{1}{2}$ — $5\frac{2}{3}$ mal in der Körperlänge, die Länge der Schnauze 4 — $4\frac{2}{3}$ mal, die Stirnbreite $7\frac{1}{3}$ — $6\frac{1}{4}$ mal, die Länge der Pectorale etwas weniger (bei jüngeren Exemplaren) oder mehr als 2 mal, die der Ventrals c. $2\frac{3}{4}$ — $3\frac{1}{3}$ mal in der Kopflänge (bis zur knöchernen Spitze des Kiemendeckels) enthalten.

Die Höhe des Kopfes übertrifft bei alten Individuen die Hälfte einer Kopflänge, bei jüngeren Individuen gleicht sie derselben. 22—26 Zähne im Ober- wie im Unterkiefer. Zwischen dem oberen Ende der Kiemenspalte und der Basis der Caudale durchbohrt die Seitenlinie 78—82 Schuppen; 8 Schuppen liegen zwischen dem Beginne der Dorsale und der Seitenlinie, 10—11 zwischen letzterer und dem Beginne der Anale in einer vertikalen Reihe.

D. 26—27. A. 42—46. L. 1. 78—82.

Notes from the Leyden Museum, Vol. XVI.

69. *Mormyrops breviceps* n. sp.

Ein Exemplar, $35\frac{1}{2}$ Cent. lang, aus dem St. Paul-Flusse.

Kopf niedrig, comprimirt, kurz, unbedeutend mehr als 2 mal länger als hoch. Schnauze vorne gerundet, Oberkiefer den Unterkiefer vorne überragend.

Leibeshöhe $7\frac{2}{3}$ mal, Kopflänge $5\frac{1}{6}$ mal in der Körperlänge, Schnauze $4\frac{3}{5}$ mal, Stirnbreite etwas mehr als 8 mal, Pectorale etwas weniger als 2 mal (mehr als $1\frac{5}{6}$ mal), Ventrals $2\frac{2}{3}$ mal in der Kopflänge enthalten.

Schwanzstiel bedeutend länger als bei *Morm. deliciosus*; die Länge desselben ist bei *M. breviceps* $1\frac{5}{6}$ mal, bei einem gleich grossen Exemplare von *M. deliciosus* fast 3 mal, die Höhe des Schwanzstieles bei ersterer Art $4\frac{1}{4}$ mal, bei letzterer etwas mehr als 5 mal in der Kopflänge enthalten. Kieferzähne oben wie unten 20, am freien Rande querabgestutzt, hie und da schwach concav.

Die Basislänge der Dorsale gleicht der Kopflänge und ist etwas weniger als $1\frac{1}{2}$ mal in der Basislänge der Anale enthalten.

Zwischen der Seitenlinie und dem Beginne der Dorsale liegen 9, zwischen ersterer und dem Beginne der Anale 11 Schuppen in einer Querreihe, ferner 90 Schuppen zwischen dem oberen Ende der Kiemenspalte und der Basis der überschuppten Caudale.

D. 26. A. 43. P. 10. V. 6.

Körperfärbung wie bei *M. deliciosus*.

70. *Mormyrus Henryi* sp. Gill, Gthr.

2 Exemplare, $20\frac{1}{2}$ und $29\frac{1}{2}$ Cent. lang, aus dem St. Paul-Flusse bei Soforeh Place und dem Du Queah-Fluss.

Kopflänge bis zum knöchernen Deckelrande $7\frac{2}{3}$ -weniger als $7\frac{1}{4}$ mal in der Körperlänge, Schnauzenlänge $4\frac{1}{2}$ -etwas mehr als 4 mal, Augendiameter 10—11 mal, Stirnbreite fast 4— $4\frac{2}{5}$ mal, grösste Kopfhöhe $1\frac{5}{6}$ mal, Kopfbreite c. 2— $2\frac{1}{4}$ mal in der Kopflänge enthalten.

Notes from the Leyden Museum, Vol. XVI.

Schnauze gewölbt, nasenförmig über die unterständige Mundspalte vorspringend, deren Breite zwischen den Mundwinkeln genau oder etwas weniger als $\frac{1}{4}$ der Kopflänge beträgt. 4—5 zweispitzige Zähne im Zwischen- und 6 im Unterkiefer, nächst der Spitze intensiv dunkel goldgelb.

Die Basislänge der Dorsale ist c. 2 mal (etwas mehr oder weniger als 2 mal), die der Anale $2\frac{5}{18}$ — $2\frac{2}{7}$ mal in der Körperlänge, die Länge der Pectorale $1\frac{2}{3}$ —nahezu $1\frac{1}{2}$ mal in der Kopflänge enthalten. Der Beginn der Dorsale fällt in die Mitte zwischen der Insertionsstelle der Ventralen und den Beginn der Anale, der vertikal unter der Basis des 7.—8. Dorsalstrahles liegt.

C. 140 Schuppen längs der Seitenlinie zwischen dem oberen Ende der Kiemenspalte und der Basis der Caudale, 10 Schuppen zwischen der Basis des ersten Dorsalstrahles und der Seitenlinie und 12 zwischen letzterer und dem Beginn der Anale.

Die Länge des Schwanzstieles ist c. $1\frac{3}{5}$ mal, die geringste Höhe desselben etwas mehr als 4 mal, die grösste Rumpfhöhe c. $1\frac{1}{2}$ mal in der Kopflänge enthalten.

V. 6. P. 9. D. 42—43. A. 41—43. L. l. 140. L. tr. $10\frac{1}{12}$.

71. *Mormyrus liberiensis* n. sp.

Zahlreiche Exemplare, 5.2—15.2 Cent. lang, aus dem Sulymah- und Junk-Flusse und den in den Fischermann-See einmündenden Bächen.

Grösste Leibeshöhe in der Regel $4\frac{3}{4}$ mal, selten $4\frac{1}{4}$ mal, Kopflänge bis zum oberen Ende der Kiemenspalte 5— $5\frac{2}{3}$ mal, bis zum hinteren knöchernen Rande des Kiemendeckels $5\frac{1}{2}$ — $5\frac{3}{4}$ —, selten 6 mal, Länge der Pectorale 7— $7\frac{1}{3}$ mal, Basislänge der Dorsale etwas mehr als $5\frac{2}{3}$ — $6\frac{2}{3}$ mal, die der Anale $3\frac{4}{5}$ — $3\frac{1}{2}$ mal in der Körperlänge, Schnauzenlänge durchschnittlich $3\frac{1}{2}$ —4 mal, Augendiameter 7—fast 8 mal in der Kopflänge (bis zum oberen Ende der Kiemenspalte) enthalten.

Schnauze kurz, vorne gerundet, nach vorne die Mund-

spalte nur ganz unbedeutend oder aber nicht überragend. Stets nur 5 Zähne am oberen Kieferrande, in ein Dreieck gruppiert (\wedge), im Unterkiefer 4—6 im Ganzen. Zahngruppe längs der Mitte der Gaumenfläche gestreckt oval, nach vorne zugespitzt, die vorderen Zähne derselben klein und spitz, die hinteren an der Spitze stumpf. Zähne längs der Mittellinie der Mundhöhle einreihig, spitz. Kieferzähne gegen den freien Rand an Breite zunehmend und daselbst in 2 kurze Zacken auslaufend oder schwach concav.

Die Pectorale steht an Länge dem Kopfe ausnamslos bedeutend nach und fällt mit ihrem hintern Ende c. um 1—3 Schuppenlängen vor die Insertionsstelle der Ventrals. Nur bei einem der mir zur Untersuchung vorliegenden Exemplare erreicht die Spitze der Pectorale die Einlenkungsstelle der Bauchflossen.

Der Beginn der Dorsale liegt durchschnittlich 2 mal näher zur Basis der mittleren Caudalstrahlen als zum vorderen Kopfende und die Basislänge der Flosse ist etwas weniger als 2 mal in der der Anale enthalten. Der Beginn der Anale liegt ein wenig näher zur Basis der Pectorale als zur Basis der mittleren Caudalstrahlen.

Ventrals kurz, c. $1\frac{1}{2}$ — $1\frac{3}{4}$ mal in der Länge und c. 2 mal in der des Kopfes enthalten; ihre Einlenkungsstelle ist fast ebenso weit von der Basis des ersten Dorsalstrahles wie von dem vorderen Kopfende entfernt.

Zwischen dem oberen Ende der Kiemenspalte und der Basis der Caudale liegen 60—64 Schuppen längs der Seitenlinie, zwischen letzterer und der Basis des ersten Dorsalstrahles 8—9 Schuppen und ebenso viele zwischen der Seitenlinie und dem Beginn der Anale. 19—20 Schuppen zwischen der Einlenkungsstelle der Ventrals und der Rückenlinie in einer vertikalen Reihe.

Die geringste Höhe des schlanken Schwanzstieles gleicht durchschnittlich $\frac{1}{4}$ der grössten Rumpfhöhe.

M. liberiensis ist nahe verwandt mit *M. brachyistius* Gill. und *M. microcephalus* Gthr.; von erstgenannter Art unterscheidet sie sich hauptsächlich durch die grössere Zahl

der Schuppen längs der Seitenlinie (60—64 gegen 50), von letzterer durch die bedeutend grössere Rumpfhöhe.

D. 16—17. A. 25—28. L. 1. 60—64.

72. *Mormyrus tenuicauda* n. sp.
(an *Mormyrus Sauvagii* Boul.?)

12 Exemplare, $6\frac{1}{2}$ — nahezu 12 Cent. lang, aus dem Du Queah- und Junk-Flusse.

Schnauze kurz, stark gewölbt, nasenförmig über die quergestellte kleine Mundspalte vorspringend, die in vertikaler Richtung in der Regel genau unter der Augenmitte, sehr selten unbedeutend vor dieser liegt. Schwanzstiel lang, sehr schlank.

Rückenlinie von der Schnauzenspitze bis zur Dorsale mehr oder minder rasch ansteigend und in der Regel nur längs dem Kopfe, seltener auch in der Nackengegend schwach bogenförmig gekrümmt.

Die relative Höhe des Rumpfes nimmt mit den Alter merklich zu; bei den kleinsten Exemplaren ist die grösste Rumpfhöhe zwischen dem Beginne der Dorsale und der Anale etwas mehr als $3\frac{1}{3}$ — $3\frac{1}{4}$ mal in der Körperlänge (c. 4 mal in der Totallänge), bei den grössten Exemplaren fast $2\frac{1}{3}$ — $2\frac{2}{3}$ mal in der Körperlänge oder c. $3\frac{1}{4}$ — $3\frac{1}{3}$ mal in der Totallänge, die Kopflänge bis zum hinteren Rande des Kiemendeckels unbedeutend mehr oder weniger als 4 mal in der Körperlänge, die Länge der Schnauze in der Regel nur 4- seltener $4\frac{1}{2}$ —5 mal, die Stirnbreite c. $2\frac{2}{3}$ - nahezu 3 mal, der Augendiameter c. 4 mal, die Breite der Mundspalte $3\frac{1}{3}$ — $3\frac{2}{3}$ mal, die Länge der Pektoriale c. $1\frac{1}{3}$ — $1\frac{1}{4}$ mal, die der Venträle unbedeutend mehr als 2- etwas weniger als $2\frac{1}{3}$ mal in der Kopflänge bis zum hinteren knöchernen Rand des Kiemendeckels enthalten.

Kieferzähne zweispitzig mit divergirenden Spitzen, im Unterkiefer 20, im Zwischenkiefer 10 an der Zahl.

Die Spitze der zurückgelegten Pektoriale reicht nahezu

bis zur Längenmitte der Ventrals oder noch ein wenig hinter diese zurück.

Der Beginn der Dorsale fällt ein wenig näher zum hinteren knöchernen Rand des Kiemendeckels als zur Basis der mittleren Caudalstrahlen.

Die Basislänge der Dorsale ist c. $4\frac{1}{2}$ — $4\frac{2}{3}$ mal, die der Anale $3\frac{1}{6}$ — $3\frac{2}{3}$ mal in der Körperlänge enthalten. Der obere, schräge gestellte Rand der Dorsale ist stärker concav als der untere Rand der Anale. Der 3. und 4. höchste Dorsalstrahl gleicht $\frac{3}{4}$ — $\frac{2}{3}$ der Kopflänge und ist nur unbedeutend länger als der entsprechende Strahl in der Anale; die kürzesten Dorsalstrahlen sind $2\frac{2}{3}$ —3 mal in der grössten Flossenhöhe enthalten. Die tief gespaltene Caudale ist stets ein wenig kürzer als der Kopf.

Die Länge des Schwanzstieles steht der Basislänge der Dorsale nur wenig nach und ist 5— $5\frac{1}{2}$ mal in der Körperlänge enthalten. Die geringste Höhe des Schwanzstieles erreicht bei den kleinsten Exemplaren c. $\frac{1}{4}$, bei den grössten Individuen c. $\frac{1}{6}$ der grössten Rumpfhöhe.

Bei jedem der mir zur Untersuchung vorliegenden Exemplare liegt ein grosser fast schwarzvioletter Fleck von c. dreieckiger Form im vorderen Theile der Dorsale. Er zieht von der Basis der 8—11 ersten Strahlen zur Spitze der 3—4 oberen Dorsalstrahlen und ist am hinteren Rande nicht scharf abgegrenzt.

Zwischen der Seitenlinie und dem Beginn der Dorsale so wie der Anale liegen je 12 horizontale Schuppenreihen. Kopf braunviolett, Rumpf braun mit Silberglanz und dicht mit violettbraunen Pünktchen übersät.

D. 26—27. A. 30—33. P. 9. V. 6. L. 1. 39—40. L. tr. $12\frac{1}{12}$.

Da die mir zur Untersuchung vorliegenden Exemplare nur bis zu 12 Cent., das von Dr. Boulenger beschriebene typische Exemplar von *Morm. Sauvagii* aus dem unteren Congo $17\frac{1}{2}$ Cent. lang, lässt sich nicht mit voller Sicherheit entscheiden, ob die in der Zahl der Flossenstrahlen und hauptsächlich die in der Körperhöhe vorkommenden

Unterschiede auf Altersverschiedenheiten zurückzuführen seien oder nicht. Nach den von mir untersuchten Exemplaren von *Mormyrus* (*Petrocephalus*) *tenuicauda* m. zu schliessen, müsste die mit dem Alter zunehmende relative Höhe bei einem 17.5 Cent. langen Exemplare dieser Art um Vieles bedeutender sein als bei *M. Sauvagii* Boul., in dessen Beschreibung auch nicht das Vorkommen eines violetten Fleckes im vordersten Theile der Dorsale erwähnt wird, der für *M. tenuicauda* charakteristisch ist. In der Zahl der Schuppen, in der Lage und Grösse der Mundspalte, Länge der Pectorale stimmen die beiden genannten Arten aber auffallend mit einander überein, auch in der relativen Kopflänge zeigt sich keine sehr wesentliche Abweichung. Die Flossenformel von *M. Sauvagii* lautet: D. 29. A. 36. V. 6.

73. *Mormyrus Usheri* Gthr.

1 Exemplar, 23 Cent. lang, aus dem Du Queah-Flusse?

Grösste Rumpfhöhe fast $3\frac{2}{3}$ mal, Kopflänge bis zum Deckelrande $4\frac{1}{2}$ mal, bis zum oberen Ende der Kiemenpalte c. $4\frac{1}{2}$ mal in der Körperlänge, Länge der Schnauze bis zur Spitze des fleischigen Ansatzes des Unterkiefers fast $2\frac{3}{4}$ mal, bis zum vorderen Rande des Zwischenkiefers mehr als $3\frac{1}{4}$ mal, Augendiameter nahezu 5 mal (oder c. 2 mal in der Schnauzenlänge bis zum Ende des fleischigen Unterkiefer-Ansatzes), Länge der Pectorale etwas weniger als 1 mal, Länge des Schwanzstieles c. $1\frac{1}{2}$ mal in der Kopflänge, Höhe des Schwanzstieles c. $4\frac{1}{2}$ mal in der grössten Rumpfhöhe enthalten.

Unterkiefer unbedeutend den oberen Kieferrand nach vorne überragend. Im Zwischenkiefer 5 Zähne, das äussere Paar derselben liegt ziemlich bedeutend hinter den 3 mittleren Zähnen, gleichsam eine 2. Reihe bildend. 6 Zähne im Unterkiefer. Eine fleischige Verdickung liegt zwischen den Unterkieferästen an der Unterseite des Vor-

derkopfes und dehnt sich nach vorne ein wenig über das knöcherne Unterkieferende aus.

Die Basislänge der Dorsale gleicht der Kopflänge bis zum oberen Ende der Kiemenspalte und die der Anale der Kopflänge bis zum knöchernen Deckelrande.

Auf der linken Körperseite liegen 56, auf der rechten 57 (58?) Schuppen längs der Seitenlinie bis zur Basis der mittleren Caudalstrahlen, ferner 9—10 Schuppen sowohl über wie unter der Seitenlinie bis zum Beginn der Dorsale und der Anale.

Die Pectorale an der rechten Körperseite enthält bei dem von mir untersuchten Exemplare 11, die der linken Seite 9 Strahlen, die rechts gelegene Ventrals 6, die linke nur 5 Strahlen.

D. 27. A. 32. L. 1. 56—58 (59?) L. tr. 20.

74. *Mormyrus mento* Boul.

1 Exemplar, c. 15 Cent. lang, aus dem Sulymah-Flusse.
P. 11. D. 33. A. 36. L. 1. 84. L. tr. 15¹/₁₃.

Kopflänge (mit Einschluss des fleischigen Kinnanhangs) bis zum knöchernen Deckelrande 4½ mal, Leibeshöhe etwas mehr als 3½ mal, Länge des schlanken Schwanzstieles 5 mal in der Körperlänge, Augendiameter c. 4 mal, Schnauzenlänge bis zum vorderen Rande des Zwischenkiefers unbedeutend weniger als 4 mal, bis zur Spitze des fleischigen Anhangs am Unterkiefer nahezu 3 mal (mehr als 2½ mal), Breite der Mundspalte c. 5 mal, Stirnbreite 3 mal, Länge der Brustflossen c. 1½ mal, Basislänge der Dorsale 1½ mal, der Anale mehr als 1½ mal, Länge der Ventralen etwas weniger als 3 mal (c. 2½ mal) in der Kopflänge enthalten.

Mundspalte klein, in gleicher Höhe mit dem unteren Augenrande. Die Kiefer reichen gleich weit nach vorne; 5 Zähne im Zwischen- und 6 im Unterkiefer, zweispitzig. Die Zahnsitzen sind sehr kurz, abgestumpft, mässig divergirend. Ein sehr fleischiger, stark entwickelter, stumpf-

Notes from the Leyden Museum, Vol. XVI.

konisch überhängender Lappen am vorderen Theile des Unterkiefers.

Der Beginn der Dorsale liegt ein wenig näher zum hinteren Ende des Kiemendeckels als zur Basis der Caudale und fällt vertikal über den 6ten oder 7ten Analstrahl. Der Beginn der Anale ist gleich weit von der Basis der Caudale und dem hinteren Rande des Vordeckels entfernt. Die Spitze der Pektoreale reicht ein wenig über die Längenmitte der Ventrale zurück.

Die Höhe des Schwanzstieles ist 4 mal in dessen Länge und c. $5\frac{2}{3}$ mal in der grössten Rumpfhöhe enthalten. 12 Schuppen ringsum den Schwanzstiel, 84 längs der Seitenlinie, 15 über und ebenso viele unter der Seitenlinie bis zum Beginn der Dorsale und der Anale, ferner weiter vorne 18 Schuppen über und unter der *Linea lateralis* bis zur Rücken- und Bauchlinie.

Dunkel silbergrau, metallisch glänzend, hie und da stahlblau schimmernd, überall sehr dicht und äusserst zart dunkel graubraun punktirt.

Scombresocidae.

75. *Belone senegalensis* C. V.

2 Exemplare, 25 und $27\frac{1}{2}$ Cent. lang, aus dem Fischer-
mann-See bei Buluma.

Kopflänge $2\frac{1}{7}$ — $2\frac{1}{10}$ mal in der Körperlänge, die Länge der Schnauze c. $1\frac{2}{3}$ - ein wenig mehr als $1\frac{1}{2}$ mal in der Kopflänge enthalten.

Die Augenlänge übertrifft nur unbedeutend die Breite der Stirne und ist c. $2\frac{1}{3}$ mal in der Länge des hinter dem Auge gelegenen Kopftheiles enthalten. Die Breite der flachen überschuppten Stirngrube ist 3- fast $3\frac{3}{4}$ mal in der Stirnbreite begriffen. Das hintere Endstück des Maxillare wird bei geschlossenem Munde der Höhe nach mehr als zur Hälfte von dem Präorbitale bedeckt. Vomer zahnlos.

Notes from the Leyden Museum, Vol. XVI.

Die Länge der Pectorale gleicht bei dem grösseren Exemplare nahezu der Entfernung der Flossenbasis vom hinteren Augenrande; bei dem kleineren Exemplare ist der Abstand etwas geringer; stets aber ist die Pectorale länger als der hinter dem Auge gelegene Kopftheil. Die Einlenkungsstelle der Ventrale fällt bei dem kleineren Exemplare genau in die Mitte der Entfernung des hinteren Augenrandes von der Basis der Caudale, bei dem grösseren Exemplare liegt die Ventrale mit ihrer Basis um mehr als $\frac{1}{2}$ Augenlänge näher zur Caudale als zum Auge. Der untere Lappen der Caudale ist länger als der obere.

Zwischen dem oberen Ende der Kiemenspalte und der Basis der Caudale liegen c. 184—203 Schuppen in einer horizontalen Reihe. Die Seitenlinie durchbohrt zwischen der Pectorale und Ventrale 57—58, zwischen letzterer und der Basis der Caudale 81—85 Schuppen. Der kurze Schwanzstiel ist comprimirt, ohne Seitenkiel.

Eine bleigraue Binde zieht vom oberen Ende der Kiemenspalte zur Caudale und ist zwischen der Anale und Dorsale am breitesten, an und zunächst ihrem Beginn hinter dem Kopfe fast linienförmig.

D. 14—16. A. 17—18. P. 10.

76. *Hemirhamphus Schlegelii* Blkr.

Ein Exemplar, ohne Caudale $11\frac{1}{2}$ Cent. lang, aus dem Fischermann-See.

Kopflänge etwas weniger als $2\frac{1}{2}$ mal in der Körperlänge, Länge des Unterkiefers, vom vorderen Ende des Oberkiefers gemessen etwas weniger als 2 mal in der Kopflänge und c. $4\frac{1}{2}$ mal in der Körperlänge, Auge und Stirnbreite je c. $9\frac{1}{2}$ mal in der Kopflänge oder ein wenig mehr als $1\frac{2}{3}$ mal in dem hinter dem Auge gelegenen Kopftheil enthalten.

Die Einlenkungsstelle der Ventrale ist ebenso weit von der Basis der Caudale wie von der der Pectorale entfernt.

D. 13. A. 14.

Notes from the Leyden Museum, Vol. XVI.

77. *Exocoetus lineatus* C. V.

2 Exemplare, bei Ergänzung der beschädigten Caudallappen c. 41—42 Cent. lang, von Gran Canaria.

Leibeshöhe durchschnittlich 6 mal, Kopflänge $4\frac{1}{2}$ — $4\frac{1}{3}$ mal, Länge der Ventrals c. $3\frac{1}{2}$ mal in der Körperlänge, Augendiameter $3\frac{1}{2}$ - ein wenig mehr als $3\frac{1}{3}$ mal, Schnauzenlänge $3\frac{1}{2}$ — $3\frac{1}{3}$ mal, Stirnbreite ein wenig mehr als 3 mal in der Kopflänge enthalten. Die Höhe des Kopfes ist ein wenig grösser als der Abstand der Schnauzenspitze vom hinteren Augenrande. Stirne querüber flach oder sehr schwach concav.

Die Einlenkungsstelle der Ventrals liegt ein wenig näher zur Basis der mittleren Caudalstrahlen als zum hinteren Augenrande.

38—40 Schuppen zwischen dem Hinterhauptsende und dem Beginn der Dorsale, 60—62 zwischen dem oberen Ende der Kiemenspalte und der Basis der mittleren Caudalstrahlen, $7\frac{1}{2}$ Schuppen zwischen dem Beginn der Dorsale und der Seitenlinie.

Eine weisse Binde zieht c. vom mittleren Längendrittel der innersten Pektoralstrahlen schräge nach hinten bis zu den mittleren Pektoralstrahlen und nimmt gegen diese an Breite ab.

D. 12—13. A. 10—11.

Cyprinodontidae.78. *Haplochilus spilauchen* A. Dum.

Poecilia spilauchena A. Dum., Rept. et Poiss. d'Afrique occid., Arch. du Muséum, T. X, p. 258, pl. XXII, Fig. 6 & 6a.

Apocheilichthys typus Blkr., l. c. p. 116, pl. 24, Fig. 1 (misslungen).

12 Exemplare von Robertsport, 4.4—6 Cent. lang.

Während bei den kleinsten Individuen die grösste Rumpfhöhe nur $\frac{1}{4}$ der Körperlänge erreicht, ist sie bei den

Notes from the Leyden Museum, Vol. XVI.

grössten der mir zur Untersuchung vorliegenden Exemplaren $3\frac{1}{2}$ —3 mal in der letzteren enthalten. Die Kopflänge ist c. $3\frac{1}{2}$ — $3\frac{1}{3}$ mal in der Körperlänge, der Augendiameter $2\frac{1}{3}$ — $2\frac{2}{3}$ mal, die Stirnbreite nahezu 2 mal, die Länge der Schnauze $2\frac{3}{4}$ —3 mal in der Kopflänge enthalten.

Der Beginn der Dorsale fällt 2 mal näher zur Basis der Caudale als zum hinteren Augenrand oder auch zur Augenmitte und der der Anale um c. $\frac{1}{2}$ bis eine ganze Augenlänge näher zur Caudale als zum hinteren Augenrand.

Die grösste Höhe der Dorsale gleicht bei Weibchen nur dem Abstände des vorderen Schnauzenendes vom hinteren Augenrande, übertrifft aber bei Männchen ein wenig eine ganze Kopflänge.

In der hinteren Rumpfhälfte, etwa vom Beginn der Dorsale an, ziehen c. 6—7 grauviolette schmale Querbinden über die ganze Rumpfhöhe herab und ebenso viele Querbinden liegen auf der Caudale. Bei den Männchen schliesst sich zuweilen unmittelbar an den Vorderrand jeder Rumpfbinde eine fast etwas breitere silberfarbige Querbinde an, und die 2 letzten Analstrahlen sind abwechselnd, sehr deutlich hell und dunkel gefleckt. Bei ganz kleinen Individuen scheinen die dunklen Querbinden am Rumpfe gänzlich zu fehlen oder sind wenigstens nur äusserst schwach angedeutet.

D. 7—8. A. 12—13. L. 1. 26—27. L. tr. $7\frac{1}{2}$ (zwischen Dorsale und Anale).

79. *Haplochilus infrafasciatus* Gthr.

4 Exemplare, Männchen, 5.4- nahezu 7 Cent. lang, aus dem Junk-Flusse.

Kopflänge $3\frac{2}{3}$ - mehr als $3\frac{1}{4}$ mal, grösste Leibeshöhe $4\frac{1}{4}$ - etwas weniger als 4 mal in der Körperlänge, Augendiameter etwas mehr als 3 mal (bei dem kleinsten Exemplare) bis 4 mal, Stirnbreite durchschnittlich 2 mal,

Notes from the Leyden Museum, Vol. XVI.

Schnauzenlänge $2\frac{1}{4}$ - fast 3 mal, Länge der Pectorale $1\frac{1}{3}$ — $1\frac{2}{3}$ mal, Länge der Ventrals etwas weniger als 2 mal in der Kopflänge enthalten. Die Caudale ist ein wenig länger als der Kopf.

Bei sämtlichen Exemplaren liegt auf jeder Schuppe der oberen Hälfte oder selbst der 2 oberen Höhendritteln des Körpers ein prachtvoll carminrother, schräge gestellter Querstreif bald näher zur Basis, bald näher zum hinteren Rande der einzelnen Schuppen; die Dorsale, Anale und Caudale sind zart carminroth gesprenkelt oder gefleckt.

Nur bei einem, $6\frac{1}{2}$ Cent. langem Exemplare laufen auf der linken Körperseite in der unteren Hälfte des Rumpfes zwischen dem Kopfe und dem Beginn der Anale ziemlich breite, nahe an einander gerückte, nicht scharf abgegrenzte (verschwommene) braune Querbinden bis gegen den Bauchrand herab, auf welche nach hinten bis zur Caudale noch 5 schmalere, braune Querbinden folgen, die von der Rückenlinie bis zum unteren Leibesrande herabziehen. Auf der rechten Körperseite dagegen sind die breiten Querbinden der vorderen Rumpfhälfte zu einer breiten, nicht scharf abgegrenzten Längsbinde vereinigt, die sich nach hinten, wenn gleich nur in schwacher Andeutung bis zur Caudale verfolgen lässt. Bei den 3 übrigen Exemplaren fehlt jede Spur einer dunkleren Längsbinde und es liegen am Rumpfe zwischen dem hinteren Ende der Pectorale und der Basis der Caudale 7—9 dunkelbraune Querstreifen oder schmale Querbinden, von denen die beiden vordersten am schwächsten entwickelt sind. Die 4 letzten Querstreifen ziehen bei dem kleinsten dieser 3 Exemplare, ähnlich wie bei dem zuerst beschriebenen kleinen Exemplare mit der dunklen Längsbinde am Rumpfe, bis zur Rückenlinie hinauf; bei den 2 grössten Exemplaren aber verlieren sie sich wie die übrigen vorangehenden Streifen im oberen Theile der Körperseiten.

Nach Günther beträgt die Zahl der Analstrahlen bei *H. infra fasciatus* nur 14, während ich bei jedem der 4 Exemplare aus Liberia deren 16 zähle.

Notes from the Leyden Museum, Vol. XVI.

Zwischen dem Beginn der Dorsale und jenem der Anale liegen $8\frac{1}{2}$ Schuppen in einer schrägen Reihe.

D. 11. A. 16. L. 1. 28—29.

Neolebias n. g.

Mundspalte klein, seitlich und horizontal entwickelt. Unterkieferhälften fest vereinigt. Zwei Zahnreihen im Zwischen- und Unterkiefer; Zähne der Aussenreihe gegen das freie Ende zu in 2 stark divergierende Äste gespalten, Zähne der Innenreihe noch zarter, stark zugespitzt. Schnauze kurz (vorne stark oval gerundet), Anale hinter dem Ende der Dorsale in vertikaler Richtung beginnend. Ventrals unter dem Beginn der Caudals eingelenkt.

80. *Neolebias unifasciatus* n. sp.

Mehrere Exemplare, bis zu 2 Cent. lang, von Robertsport.

Körperform gestreckt oval, stark comprimirt. Die obere Kopflinie erhebt sich mässig mit der Rückenlinie bis zum Beginn der Dorsals, hinter welcher sich die Rückenlinie fast ebenso gleichmässig bis zur Caudals senkt.

Die Oberseite des Kopfes ist in der Stirngegend und am Hinterhaupte querüber ein wenig gewölbt, etwas schwächer an der Schnauze, deren vorderer Rand stark oval gerundet ist. Die Mundspalte erhebt sich mässig nach vorne und ist im Verhältniss zu den Cyprinodon-Arten von geringer Breite am vorderen Ende. Der Zwischenkiefer überragt nicht nach vorne den Unterkiefer.

Die grösste Rumpfhöhe zwischen dem Beginne der Dorsals und der Ventrals ist c. $3\frac{1}{2}$ — $3\frac{3}{4}$ mal, die Kopflänge genau oder ein wenig mehr als 3 mal in der Körperlänge, der Augendiameter c. 3 mal, die Schnauzenlänge c. 4 mal in der Kopflänge enthalten. Die Stirnbreite steht der Augulänge nach.

Notes from the Leyden Museum, Vol. XVI.

Die Dorsale beginnt in der Mitte der Körperlänge, die Anale in vertikaler Richtung unter der Basis des letzten Dorsalstrahles, ebenso weit von der Basis der Caudale wie vom hinteren Kopfe entfernt. Die Ventrale ist genau unter oder nur ganz unbedeutend vor der Dorsale in vertikaler Richtung eingelenkt. Dorsal- und Analstrahlen von keiner bemerkenswerther Höhe.

Caudale am hinteren Rande eingebuchtet.

D. 10. A. 8. L. 1. 34.

Eine scharf abgegrenzte dunkelbraune Längsbinde zieht von dem vorderen seitlichen Ende der Schnauze längs der Mitte der Rumpfhöhe zur Basis der Caudale, an der sie mit einem intensiver gefärbten Fleckchen endigt.

Cyprinidae.

81. *Barbus ablabe* sp. Blkr.

Puntius (Barbodes) ablabe Blkr., Poiss. de la Côte de Guinée, pag. 114, Tab. XXIII, Fig. 1.

1 Exemplar, c. 6.7 Cent. lang, aus einem Waldbache bei Hill Town.

Dr. Günther vereinigt, wie ich glaube, mit Unrecht diese Art mit *Barbus camptacanthus* Blkr. und mag zu diesem Vorgange durch die unrichtige Abbildung Bleeker's veranlasst worden sein, die der trefflichen Beschreibung desselben Autors nicht entspricht.

Die Körperform ist bei *B. ablabe* viel gestreckter, die Kopf- und Nackenlinie bedeutend schwächer gebogen, das Auge grösser und die Schnauze kürzer als bei *Barbus camptacanthus*.

Die Kopflänge gleicht der Leibeshöhe und ist ein wenig mehr als $3\frac{1}{2}$ mal in der Körperlänge, die Augenlänge so wie die Stirnbreite 3 mal, die Schnauzenlänge $3\frac{1}{3}$ mal in der Kopflänge enthalten.

Die obere Profillinie des Kopfes erhebt sich zugleich

Notes from the Leyden Museum, Vol. XVI.

mit der Nackenlinie nur allmählig, im Ganzen daher nicht bedeutend bis zum Beginne der Dorsale und ist schwach bogenförmig gekrümmt.

Die Seitenlinie durchbohrt 23 Schuppen am Rumpfe (somit um 2 Schuppen mehr als bei den von mir untersuchten zahlreichen Exemplaren von *B. camptacanthus* aus Liberia) und 2 auf der Caudale.

Eine braune schmale Längsbinde auf der Schuppenreihe der Seitenlinie.

D. 11. L. 1. 23 (+ 2 auf d. C.). L. tr. $3\frac{1}{2}/1\frac{1}{2}$ bis z. V., $3\frac{1}{2}$ bis z. Bauchlinie.

82. *Barbus camptacanthus*, sp. Blkr.

Var.: *liberiensis* Steind.

Zahlreiche Exemplare von 5—11.1 Cent. Länge, aus den Bächen bei Grand Cape Mount und aus einem Gebirgsbach bei Robertsport, stimmen in der Körperform und Schuppenzahl genau mit *Barbus camptacanthus* Blkr. (*Puntius* (*Barbodes*) *camptacanthus* Blkr., l. c., p. 111, Tab. XXIII, Fig. 2) überein, zeigen jedoch ausnahmslos 3 grosse braune Flecken längs der Höhenmitte des Rumpfes wie *Barb. trimaculatus* Pet. = *Barb. trispilus* sp. Blkr.

Die obere Profillinie des Kopfes und die Nackenlinie erhebt sich ziemlich rasch und unter starker Bogenkrümmung bis zum Beginn der Dorsale.

Die Leibeshöhe ist stets 3 mal, die Kopflänge $3\frac{2}{3}$ —etwas mehr als $3\frac{1}{2}$ mal in der Körperlänge, der Augendiameter unbedeutend mehr als $3\frac{1}{2}$ — $3\frac{2}{3}$ mal, die Stirnbreite bei einem Exemplare von c. 9 Cent. Länge 3 mal, bei einem Exemplare von c. 11 Cent. Länge dagegen ein wenig mehr als $2\frac{2}{3}$ mal in der Kopflänge enthalten.

Die Schnauze ist stets ein wenig länger als das Auge und c. $\frac{1}{3}$ der Kopflänge gleich. Der erste Rumpffleck liegt ein wenig über der 4.—6. Schuppe der Seitenlinie, ist zuweilen stark verschwommen oder nur durch eine intensiv braune, breite Umsäumung der Schuppenränder

Notes from the Leyden Museum, Vol. XVI.

angedeutet. Der 2^{te} Rumpffleck liegt zum grösseren Theile über der Seitenlinie und in vertikaler Richtung hinter der Dorsale. Der letzte ovale Rumpffleck endlich liegt vor der Caudale und ist in seiner Höhenmitte von der Seitenlinie durchzogen.

Der letzte Strahl der Dorsale und Anale ist bis auf den Grund gespalten und mag sich zuweilen in 2 völlig gesonderte Strahlen auflösen.

Clupeidae.

83. *Clupea senegalensis* (sp. Benn., C. V.) Gthr.

4 kleine Exemplare, mit ein wenig beschädigten Caudallappen, c. 12—14 Cent. lang, und ein grosses Exemplar, 25 Cent. lang, aus dem Grand Cape Mount-Flusse.

Diese Art unterscheidet sich constant von *C. maderensis* durch die gedrungene Körperform und die relativ viel geringere Kopflänge, welche der Rumpfhöhe bedeutend nachsteht.

Die grösste Leibeshöhe ist bei den kleinsten Exemplaren $3\frac{1}{4}$ — $3\frac{2}{3}$ mal, bei dem grössten c. $2\frac{2}{3}$ mal in der Körperlänge (oder c. $4\frac{1}{2}$ mal in der Totallänge bei dem gr. Ex.), die Kopflänge bei den kleinen Exemplaren etwas mehr oder weniger als 4 mal, bei dem grössten c. $4\frac{1}{4}$ mal in der Körperlänge oder c. 6 mal in der Totallänge, die Länge des Auges durchschnittlich 4 mal in der Kopflänge, die geringste Leibeshöhe am Schwanzstiele bei dem grössten Exemplare fast $3\frac{1}{3}$ mal, bei den 4 kleineren $2\frac{1}{2}$ —etwas weniger als 3 mal in der grössten Rumpfhöhe enthalten.

Beide Kiefer reichen gleich weit nach vorne. Das hintere Ende des Oberkiefers fällt bei geschlossenem Munde genau oder nahezu unter die Augenmitte, c. 80 schlanke, lange Rechenzähne, dicht an einander gedrängt, auf der unteren Hälfte des ersten Kiemenbogens. Kiemendeckel glatt, bei kleinen Individuen etwas mehr als 2 mal, bei

dem grössten Exemplare c. $2\frac{3}{4}$ mal höher als lang.

Die Basis des 7^{ten} Dorsalstrahles fällt vertikal über die Einlenkungsstelle der Ventralen. Der Beginn der Dorsale liegt durchschnittlich um mehr als $\frac{1}{2}$ ($\frac{2}{3}$ — $\frac{3}{4}$) Kopflänge näher zum vorderen Kopffende als zur Basis der Caudale. 14 Bauchschilder zwischen der Insertionsstelle der Ventralen und der Analmündung.

Die Länge der Pektoreale ist c. $1\frac{2}{3}$ - nicht ganz $1\frac{1}{2}$ mal in der Kopflänge und c. mehr als $1\frac{1}{2}$ — $1\frac{2}{3}$ mal in dem Abstände der Pektoralbasis von der Insertionsstelle der Ventrals enthalten.

c. 49—49 Schuppen zwischen dem oberen Ende der Kiemenspalte und der Basis der mittleren Caudalstrahlen. Schuppen mit zahlreichen, zarten, fast parallel zu einander laufenden Längsstreifen am freien Felde, und 3—6 starken Längsstreifen, in ungleichen Abständen von einander und die vorderen theilweise der Höhe nach unterbrochen in der viel grösseren vorderen überdeckten Längenhälfte.

Caudallappen, bei dem grössten Exemplare fast vollständig erhalten, sehr lang, schlank, zugespitzt; der obere derselben übertrifft an Länge c. $1\frac{2}{3}$ Kopflängen.

Scapular-Fleck schwach angedeutet. Der kleine, dunkle Fleck auf der Basis der vordersten Dorsalstrahlen stets deutlich entwickelt.

Rücken bläulich grau, Rumpfseiten hell goldgelb. Auf dem mittleren Theile jeder Schuppe der 4 obersten Längsreihen ein verschwommener dunkelgrauer Fleck. An den nächstfolgenden Schuppenreihen des Rumpfes sind die Schuppen in der Mitte etwas dunkler gelb als zunächst den Rändern.

Innere Seite der Pektoreale nur bei dem grössten Exemplare dicht bräunlich punktirt.

Caudale nächst dem oberen und unteren Rande gelb, im grösseren übrigen Theile vorne wässerig grau violett, gegen die Spitze der Lappen zu bräunlich.

D. 19. A. 20—21. L. 1. 47—49. L. tr. 11.

Notes from the Leyden Museum, Vol. XVI,

Da bei älteren Exemplaren von *Clupea maderensis* Lowe die Körperhöhe im Verhältniss zur Körperlänge ein wenig zunimmt und die grösste Kumpfhöhe die Kopflänge übertrifft, glaube ich diese Art mit *C. senegalensis* Gthr. (nec C. V.) vereinigen zu können (Steind., Zur Fischf. des Seneg., 3^{te} Abth. (1870) pag 37 im Separatabdr.), welche Ansicht ich nunmehr nach Untersuchung der in den vorhergehenden Zeilen beschriebenen Exemplaren als irrig aufgeben muss, da dieselben, wesentlich verschieden von *Clupea maderensis*, genau der *C. senegalensis* Gthr. entsprechen.

84. *Pellonula vorax* Gthr.

3 Exemplare, 7—9 Cent. lang, von Robertsport.

Kopflänge $3\frac{3}{4}$ - nahezu 4 mal, Leibeshöhe mehr als $4\frac{1}{2}$ - nahezu $4\frac{2}{3}$ mal in der Körperlänge, Auge ebenso lang wie die Schnauze $3\frac{2}{3}$ —3 mal in der Kopflänge enthalten. 9 Bauchschilder zwischen den Bauchflossen und der Anale.

D. 16—17. A. 19.

85. *Albula glossodonta* sp. Forsk.

1 Exemplar, c. 33 Cent. lang, von Cape Mount.

Kopflänge fast $3\frac{1}{2}$ mal, Leibeshöhe c. $4\frac{1}{3}$ mal in der Körperlänge, Schnauze fast $2\frac{1}{2}$ mal, Auge c. $4\frac{1}{3}$ mal, Stirnbreite etwas mehr als 4 mal in der Kopflänge enthalten.

Die Ventrals ist in vertikaler Richtung unter dem fünftletzten Strahle der Dorsale eingelenkt.

R. br. 12—14. D. 17. A. 8. V. 10. L. l. 75 (+ c. 10 auf der C.). L. tr. $9\frac{1}{5}\frac{1}{2}$ bis zur V. und 10 bis zur Bauchlinie.

Notopteridae.

86. *Notopterus afer* Gthr.

9 Exemplare, 7—52 Cent. lang, aus den Bächen am

Notes from the Leyden Museum, Vol. XVI.

Fischermann-See, aus dem St. Paul-Flusse, 50 Meilen oberhalb der Mündung desselben und aus dem Junk-Flusse.

Die Kopflänge ist in ihrem Verhältniss zur Körperlänge bei jungen wie bei alten Individuen ziemlich variabel.

Die Kopflänge ist nämlich bei jungen Exemplaren $4\frac{2}{3}$ —5, bei älteren $4\frac{3}{4}$ — $5\frac{2}{7}$ mal, die grösste Leibeshöhe $4\frac{1}{3}$ — $5\frac{1}{2}$ mal in der Körperlänge, der Augendiameter $4\frac{2}{3}$ —5 mal bei jüngeren Individuen, $6\frac{1}{4}$ — $6\frac{1}{3}$ mal bei älteren, die Stirnbreite bei ersteren $4\frac{1}{4}$ — $4\frac{1}{2}$ mal, bei letzteren $4\frac{1}{3}$ —5 mal, die Schnauzenlänge $4\frac{2}{3}$ —5 mal, die Länge der Pectorale $1\frac{1}{2}$ — $1\frac{3}{5}$ mal, die Höhe der Dorsale bei kleinen Exemplaren etwas weniger, bei alten mehr als 2 mal, die Länge der Caudale c. 3— $3\frac{1}{4}$ mal in der Kopflänge enthalten.

Der Vordeckelwinkel ist ein rechter, nur der untere Vordeckelrand gezähnt.

Das hintere Ende des Oberkiefers fällt bei kleineren Individuen stets mehr oder weniger bedeutend vor den hinteren Augenrand, bei alten Exemplaren unter letzteren oder noch ein wenig weiter zurück.

Am Aussenrande des Zwischenkiefers liegt eine lockere Reihe ziemlich grosser Zähne, im Ganzen c. 8—10; unmittelbar auf diese folgt nach hinten eine Reihe viel kleinerer Spitzzähne. Im Oberkiefer folgen auf die äussere Reihe grösserer Zähne im vorderen Theile des Knochens nach innen eine, weiter zurück aber 2—4 Reihen viel kleinerer Zähnen. Grosse Hackenzähne am Rande der Zunge; das vorderste Paar derselben fällt durch besondere Länge auf.

Im Unterkiefer liegen in der Aussenreihe längere und stärkere Zähne als im Zwischenkiefer, und von diesen selbst sind die zunächst der Symphyse des Unterkiefers befindlichen Zähne die grössten der ganzen Reihe. Hinter der Aussenreihe der Unterkieferzähne liegen an und zunächst der Symphysengegend 3 Reihen kleiner hackenförmiger Spitzzähne, die an den Seiten des Unterkiefers aber allmähig in stumpfkönische und kornartige Zähne

Notes from the Leyden Museum, Vol. XVI.

übergehen, die 3—6 Reihen bilden. Dr. Günther's Angabe über die Einreihigkeit der Kieferzähne ist somit irrig.

Die Zahnbinden auf den Gaumenknochen und den Pterygoidbeinen nehmen mit dem Alter bedeutend an Breite zu; die Zähnchen sind auf diesen Knochen äusserst klein, stumpf konisch. Nur am Aussenrande der Gaumenbeine liegt eine Reihe verhältnissmässig viel grösserer Zähne. Zahnbinde am Vomer kurz, sehr gestreckt oval oder lanzettförmig.

Seitenlinie nicht scharf hervortretend, weit über der Höhenmitte des Rumpfes verlaufend. Zwischen dem oberen Ende der Kiemenspalte und der Basis der Schwanzflosse liegen c. 172—205 Querreihen von Schuppen. Unterhalb der Dorsale zähle ich in einer vertikalen Linie 20—25, 1/2 25—30 Schuppen.

27 Dornenpaare am Bauchrande vor der Analmündung bei dem grössten Exemplare in Herrn Büttikofer's Sammlung.

Zahlreiche goldbraune Flecken am Rumpfe, auf der Caudale und Anale.

R. br. 8. D. $\frac{1}{6}$. P. 14. A. c. 128—116. C. 12—14.

87. *Notopterus (Xenomystus) nigri* Gthr.

Notopterus (Xenomystus) nili, Steind. Ichthyol. Beitr. (X.), Sitzb. Wien. Akad. I. Abth. Bd. 83 (1881), pag. 196—197, Taf. IV, Fig. 2.

Ich habe am Schlusse meiner Beschreibung von *N. nili* l. c. ausdrücklich hervorgehoben, dass sich diese Art hauptsächlich durch das Vorkommen von 2, theilweise mehreren Reihen in den Kiefern von *N. nigri* unterscheidet, bei dem nach Dr. Günther die Kiefer nur eine Zahnreihe tragen. Da nun die Untersuchung zahlreicher Exemplare von *N. afer* Gthr. ergab, dass bei dieser Art auf den Kiefern mehrere Zahnreihen und zwar im Unterkiefer hinter der äusseren Zahnreihe seitlich zahlreiche, kurze, stumpfkonische und kornähnliche Zähne liegen, während nach Günther nur das Vorkommen einer einzigen Zahn-

Notes from the Leyden Museum, Vol. XVI.

reihe (wie bei *N. nigri*) angegeben wird, so kann ich wohl mit Recht voraussetzen, dass auch bei dem typischen Exemplare von *N. nigri* die Kieferzähne mehrere Reihen bilden und Dr. Günther's Beschreibung demnach theilweise ungenau sei. Es fiel demnach *N. nili* unter die Synonyma von *N. nigri*.

Das von Herrn Büttikofer in einem, in den Fischer-mann-See mündenden Bache gefangene Exemplar ist 13 Cent. lang.

Die Leibeshöhe desselben ist ein wenig mehr als $4\frac{1}{2}$ mal in der Körperlänge oder nahezu 5 mal in der Totallänge, die Kopflänge $6\frac{1}{2}$ mal in der Körperlänge oder nahezu 7 mal in der Totallänge, der Augendiameter 3 mal, die Schnauzenlänge 4 mal, die Stirnbreite fast $3\frac{1}{4}$ mal in der Totallänge enthalten. Das hintere Ende des Oberkiefers fällt vor die Augenmitte. Der ganze freie Rand des Suborbitalringes, der untere Rand der Unterkieferäste, der untere Rand des Vordeckels und dessen untere Randleiste und die ganze Winkelgegend des Präoperkelrandes sind stark gezähnt. Von der Winkelgegend der Vorleiste am Vordeckel ziehen zum freien Winkelrande 2 leistenförmige Erhebungen, die nach hinten divergiren.

Kieferbezahnung ähnlich wie bei *N. afer*. Ziemlich grosse Hackenzähne am Rande der Zunge. Stumpfe Zähnen auf den Gaumenknochen und am *Pterygoideum*. Eine Reihe längerer, spitzer Zähne am Aussenrande der Gaumen-Zahnbinde. 30 Stachelpaare am Bauchrande vor dem Beginne der Anale, die Analspalte daher noch umschliessend. Die Spitze der Pectoralen überragt den Beginn der Anale nicht bedeutend und die Länge der Bauchflossen ist c. $1\frac{1}{4}$ mal in der Kopflänge enthalten.

Die Seitenlinie durchbohrt c. 130 Schuppen; über dem Beginn der Anale vertikal zur Seitenlinie hinauf liegen c. 27—28, über letzterer bis zur Rückenlinie c. 18—19 Schuppen. Längs über der Seitenlinie 185—190 Querschuppen am Rumpfe.

A. 104. C. c. 8. P. 10.

Notes from the Leyden Museum, Vol. XVI.

*Muraenidae.*88. *Conger macrops* Gthr.

1 Exemplar, c. 49 Cent. lang, von der Küste Liberia's.

Auge sehr gross, ebenso lang wie die Schnauze, etwas mehr als $5\frac{1}{3}$ mal in der Kopflänge, letztere c. $1\frac{1}{2}$ mal in dem Abstände der Schnauzenspitze von der Analgrube enthalten.

Der Oberkiefer überragt nach vorne den Unterkiefer. Die Mundwinkel fallen unter die Augenmitte, die Entfernung der Schnauzenspitze von den Mundwinkeln erreicht nicht ganz $\frac{1}{3}$ der Kopflänge. Die grösste Kopfbreite in einiger Entfernung hinter dem Auge gleicht nahezu der grössten Kopfhöhe und ist etwas mehr als $2\frac{2}{3}$ mal in der Kopflänge (bis zur Basis der Pectorale) enthalten.

Die Zahnbinde des Unterkiefers ist in der Nähe der Symphyse am breitesten und enthält daselbst jederseits in einer dreieckigen Gruppe hackenförmig gebogene, spitze Zähne. An den Seiten des Unterkiefers liegen in der Aussenreihe 44 Zähne, die an der Spitze mehr oder minder stark quer abgestutzt sind. Die 2^{te} innere Zahnreihe an den Seiten des Unterkiefers zeigt nur sehr kurze, stumpfkonische Zähnchen, auf welche nur im vordersten Theile der Seitengegend eine 3^{te} kurze Zahnreihe folgt. Ähnlich verhält es sich auch an den Seiten des Oberkiefers; in der äusseren Zahnreihe des letzteren liegen 51 Zähne.

Eine kurze, nagelförmige Zahnbinde am Vomer; die wenigen Zähne am Stiele der Binde sind stumpf konisch, die an dem vorderen, ausgebreiteten Theile desselben gelegenen Zähne stärker zugespitzt, gleich jenen der Intermaxillar — Zahngruppe, welche alle übrigen Zähne der Mundspalte an Grösse (mässig) übertreffen. Schwanz länger als der Rest des Körpers. Der helle Randsaum ist auf der Anale viel breiter als auf der Dorsale. Eine breite, stark verschwommene braune Querbinde in der hinteren Kopfhälfte.

Notes from the Leyden Museum. Vol. XVI.

C. 225 Strahlen in der Dorsale und c. 155 in der Anale.

Entfernung der Schnauzenspitze von der Basis der Pektoralen: c. 82 Mm.

Entfernung der Schnauzenspitze von der Analgrube: c. 210 Mm.

Länge des Schwanzes: c. 285 Mm.

89. *Ophichthys semicinctus* Richards.

1 Exemplar, 58.2 Cent. lang, von Robertsport.

Im Ganzen 17 grosse Querbinden von intensiv dunkelbrauner Färbung. Vordere kleine Kopfhälfte mit zahlreichen braunen, meist ovalen Fleckchen, die gegen die Schnauzenspitze zu an Grösse allmählig abnehmen. Die Länge der Pektoralen erreicht bei diesem Exemplare nur $\frac{1}{3}$ der Kopflänge (bis zum oberen Ende der Kiemenspalte). Zähne im Ober- wie in Unterkiefer durchschnittlich dreireihig, im Unterkiefer stark abgestumpft kegelförmig, im Oberkiefer mehr kornartig, flacher, insbesondere im hintersten Theile des Knochens, und in beiden Kiefern viel kleiner als die breitbasigen Zähne am Vomer.

90. *Ophichthys* (*Sphagebranchus*) *Büttikoferi* n. sp.

6 Exemplare, $18\frac{1}{2}$ —27.2 Cent. lang, aus einem Gebirgsbache bei Hill Town.

Körperform ausserordentlich gestreckt, wurmartig. Dorsale und Anale saumartig, äusserst niedrig, mit sehr zarten Faserstrahlen. Schwanzende zugespitzt, ebenso der Kopf.

Der Schwanztheil des Körpers ist c. $1\frac{1}{4}$ - mehr als $1\frac{1}{3}$ mal länger als der Rest des letzteren, die Kopflänge nahezu oder mehr als 6 mal in der Entfernung der Schnauzenspitze von der Analmündung enthalten.

Das kleine Auge ist fast so weit von der stark sich verschmälenden Schnauzenspitze wie von dem Mundwinkel entfernt; die Länge der Mundspalte gleicht c. $\frac{1}{4}$ — $\frac{2}{9}$ der

Kopflänge, die Schnauzenlänge ist c. $6\frac{2}{3}$ —7 mal, die Entfernung der Schnauzenspitze von den Mundwinkeln c. $3\frac{3}{5}$ — $3\frac{3}{4}$ mal in der Kopflänge, der Augendiameter c. $1\frac{3}{5}$ —2 mal in der Schnauzenlänge enthalten.

Der Kopf verschmälert sich, von der Mundwinkelgehend angefangen, sehr stark zur dünnen Schnauzenspitze, die weit das vordere Ende des gleichfalls stark zugespitzten Unterkiefers überragt, daher die 4 in 2 Reihen gestellten, sogenannten Nasal- oder Zwischenkieferzähne nach unten frei liegen. Ober- und Unterkieferzähne einreihig, dicht an einander gedrängt, mit der Spitze nach hinten gerichtet. Vomerzähne gleichfalls einreihig, etwas grösser als die Kieferzähne.

Die Dorsale beginnt um c. $\frac{2}{7}$ — $\frac{3}{11}$ einer Kopflänge hinter dem oberen Ende der Kiemenspalte. Bauchhaut sehr dünn und dehnbar, so dass die Eingeweide durchschimmern.

Gelbbraun mit zarten, dunkelbraunen, sternförmigen Pünktchen an der oberen Körperhälfte. Die Leibeshöhe beträgt durchschnittlich c. $\frac{1}{35}$ — $\frac{1}{34}$ der Totallänge.

Syngnathidae.

91. *Syngnathus Kaupii* Blkr.

1 Exemplar, c. 81 Mm. lang, aus dem Grand Cape Mount-Flusse.

Kopflänge 11 Mm., Schwanzlänge ohne Caudale 45 Mm., Entfernung des hinteren Kopfrandes von der Caudale $20\frac{1}{2}$ Mm., Caudale nahezu 4 Mm. lang. Schnauzenlänge 6 Mm., Augenlänge 2 Mm., grösste Rumpfhöhe c. 4 Mm.

Eine zarte Leiste zieht an der Oberseite der Schnauze c. von der Längenmitte derselben bis zur Längenmitte der Stirne, ist daher durch einen schmalen Zwischenraum von der Hinterhauptsleiste getrennt. Ein stachelartiger Vorsprung am Vorderrande des Auges. Eine Längsleiste zieht über die Höhenmitte des Kiemendeckels. Die Dorsale be-

ginnt vertikal über der Analmündung und zieht sich über 6 Schwanzringe fort.

D. 26. Rumpfringe 14. Schwanzringe 33.

Gymnodontes.

92. *Tetrodon (Hemiconiatus) guttifer* Benn.

2 Exemplare, 23 und 30 Cent. lang, von Grand Cape Mount.

3 Läppchen umgeben die blinde Nasalgrube nach aussen, oben und unten; das obere und untere Läppchen ist tentakelförmig erhöht.

Die Kopflänge ist $2\frac{1}{3}$ - ein wenig mehr als 3 mal, die grösste Rumpfhöhe c. $3\frac{1}{3}$ mal in der Körperlänge, der Augendiameter $4\frac{1}{3}$ —6 mal, die Stirnbreite mehr als $2\frac{1}{3}$ — $2\frac{1}{2}$ mal, die Schnauzenlänge genau oder etwas weniger als $2\frac{1}{4}$ mal in der Kopflänge enthalten.

Der Beginn der Dorsale liegt ein wenig näher zur Basis der Caudale als zu der der Pektoreale; der Beginn der Anale fällt in vertikaler Richtung unter die Basismitte der Dorsale.

Die Caudale ist ein wenig länger als der Kopf, am hinteren Rande schwach concav. Die Höhe der Anale gleicht der Hälfte einer Kopflänge und ist geringer als die der Dorsale. Beide Flossen sind nach hinten zugespitzt.

Die sechseckigen, dicht an einander schliessenden Platten der Rumpfsseiten reichen nicht weit über den Beginn der Dorsale und Anale zurück.

D. 10. A. 9. P. 18. C. $2\frac{8}{2}$.

93. *Tetrodon (Gastrophysus) laevigatus* L.

2 Exemplare, $27\frac{1}{2}$ und 29.2 Cent. lang, von Grand Cape Mount und Robertstown.

Bauchstacheln mit 3 Wurzeln. Die Länge des Kopfes ist ein wenig geringer als sein Abstand von der Dorsale.

Notes from the Leyden Museum, Vol. XVI.

Caudale tief halbmondförmig eingebuchtet, die Lappenspitzen überragen daher bedeutend den hinteren Rand der mittleren Caudalstrahlen.

Kopflänge c. 3 mal in der Körperlänge, Augendiameter unbedeutend mehr oder weniger als 4 mal, Stirnbreite c. 3 mal in der Kopflänge enthalten.

D. 14. A. 12. P. 18.

Sclerodermi.

94. *Balistes maculatus* Bloch.

4 junge Exemplare, 27—64 Mm. lang, gefangen im atlantischen Ocean in der Höhe von Sierra Leone.

Trygonidae.

95. *Trygon margarita* Gthr.

3 Embryonen, Männchen, aus dem Fischermann-See bei Buluma.

Scheibenlänge, von der Schnauzenspitze bis zum hinteren Ende der Afterspalte 92, 96, 149 Mm., Scheibenbreite 109, 110 und 165 Mm., Schwanzlänge 220, 215 und 405 Mm.

Mundspalte mit wellenförmig gebogenen Kieferrändern; Zähne bereits entwickelt, platt, pflasterförmig an einander gereiht. Am Boden der Mundhöhle 5 Hautzäpfchen, die 3 mittleren nahe an einander gerückt und weit entfernt von dem äusseren Paare. Ein grosses, rundes, perlartiges Tuberkel auf der Mitte der glatten Rückenfläche; bei dem grössten der 3 Exemplare liegen sowohl vor wie hinter demselben eine Reihe sehr kleiner, runder Plättchen längs der Mittellinie des Rückens, die mit Ausnahme der 2—3, dem grossen Tuberkel zunächst stehenden, theilweise herzförmigen und etwas grösseren Plättchen vollständig unter der Haut verborgen liegen.

Die häutige Falte an der Unterseite des langen, peit-

anderen ebenso kleinen Individuen bereits vollständig fehlen.

Fundort: Sümpfe und Bäche nächst dem Fischermann-See, Sumpf bei Juring am Solymah, Sumpfbach bei Buluma, Mahfa-Fluss im Sumpfe.

Wien, Juli 1893.

ERKLÄRUNG DER ABBILDUNGEN.

- Tafel 1, fig. 1. *Eutropius altipinnis* n. sp.
fig. 2. *Mormyrops breviceps* n. sp.
Tafel 2, fig. 1. *Paratilapia Jentinkii* n. sp.
fig. 2. *Eleotris Pisonis* L. Gm.
Tafel 3, fig. 1. *Chrysichthys Büttikoferi* n. sp.
fig. 2. *Clarias liberiensis* n. sp.
fig. 3. *Hemirhombus Stampflii* n. sp.
Tafel 4, fig. 1. *Mormyrus tenuicauda* n. sp.
fig. 2. *Ophichthys Büttikoferi* n. sp.
fig. 3. *Neolebias unifasciatus* n. sp.
fig. 4. Zwischenkieferstück, von innen gesehen,
von *Neolebias unifasciatus*.
fig. 5. Gaumenpolster von *Paratilapia Jentinkii*.
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ÜBERSICHT DER BESCHRIEBENEN ARTEN.

1. *Serranus aeneus*, Is. Geoff.
2. *Lutjanus caxis*, Bl. Schn.
3. » *eutactus*, Blkr.
4. » *agenes*, Blkr.
5. *Diagramma crassispinum*, Rüpp.
6. *Pristipoma Jubelini*, C. V.
7. » *suillum*, C. V.
8. » *macrophthalmum*, Blkr.
9. *Smaris melanurus*, C. V.
10. *Gerres melanopterus*, Blkr.
11. *Dentex maroccanus*, C. V.
12. *Ehippus goreensis*, C. V.
13. *Drepane punctata*, sp. L.
14. *Galeoides polydactylus*, sp. Vahl.
15. *Otolithus senegalensis*, C. V.
16. *Acanthurus monroviae*, Steind.
17. *Trichiurus lepturus*, L.
18. *Psettus Sebae*, C. V.
19. *Caranx chrysos*, Mitch.
20. » *carangus*, Bl.
21. » *africanus*, Steind.
22. *Trachynotus ovatus*, spec. Lin.
23. *Echeneis naucrates*, Lin.
24. *Antennarius marmoratus*, Gthr.
25. *Antennarius Commersonii*, Lac., var. *campylacanthus* Blkr.
26. *Antennarius histrio*, Lin.
27. *Gobius (Chonophorus) tajasica*, Licht.
28. *Gobius soporator*, C. V.
29. *Periophthalmus Koelreuteri*, Pall., var. *papilio* Bl. Schn.
30. *Eleotris (Culius) Pisonis*, spec. L. Gm.
31. *Eleotris (Culius) Büttikoferi*, n. sp.
32. *Salarias vomerinus*, C. V.
33. *Blennius crinitus*, C. V., Gthr.?
34. *Mastacembelus Marchei*, Sauv.
35. *Sphyaena dubia*, Blkr.
36. *Mugil cephalus*, Cuv.
37. » *curema*, C. V.
38. » *falcipinnis*, C. V.
39. *Fistularia tabaccaria*, Lin.
40. *Ophiocephalus obscurus*, Gthr.
41. *Ctenopoma Petherici*, Gthr.
42. *Coris guineensis*, Blkr.
43. *Chromis niloticus*, sp. Hasselq.
44. » *mossambicus*, Pet., Steind.
45. » *Büttikoferi*, Hubr.
46. *Paratilapia (Pelmatochromis) Büttikoferi*, n. sp.
47. *Paratilapia (Pelmatochromis) Jentinkii*, n. sp.
48. *Hemichromis fasciatus*, Pet.
49. » *bimaculatus*, Gill.
50. *Cynoglossus senegalensis*, Kaup.
51. *Hemirhombus guineensis*, Blkr.
52. *Hemirhombus Stampflii*, n. sp.
53. *Clarias Salae*, Hubr.
54. » *Büttikoferi*, n. sp.
55. » *liberiensis*, n. sp.
56. » *bulumae*, n. sp.?

Notes from the Leyden Museum, Vol. XVI.

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| <p>57. <i>Eutropius mandibularis</i>,
Gthr.</p> <p>58. " <i>altipinnis</i>, n. sp.</p> <p>59. " <i>liberiensis</i>, Hubr.</p> <p>60. <i>Chrysichthys nigrodigitatus</i>,
sp. Lac.</p> <p>61. " <i>Buttikoferi</i>,
n. sp.</p> <p>62. <i>Arius Parkii</i>, Gthr.</p> <p>63. <i>Malapterurus electricus</i>, Lac.</p> <p>64. <i>Hydrocyon Forskalii</i>, Cuv.</p> <p>65. <i>Sarcodaces odoë</i>, sp. Bl.</p> <p>66. <i>Alestes macrolepidotus</i>, sp.
C. V.</p> <p>67. " <i>longipinnis</i>, Gthr.</p> <p>68. <i>Mormyrops deliciosus</i>, sp.
Leach.</p> <p>69. " <i>breviceps</i>, n. sp.</p> <p>70. " <i>Henryi</i>, sp. Gill.</p> <p>71. <i>Mormyrus liberiensis</i>, n. sp.</p> <p>72. " <i>tenuicauda</i>,
n. sp.?</p> <p>73. " <i>Usheri</i>, Gthr.</p> <p>74. " <i>mento</i>, Boul.</p> <p>75. <i>Belone senegalensis</i>, C. V.</p> <p>76. <i>Hemirhamphus Schlegelii</i>,
Blkr</p> <p>77. <i>Erocoetus lineatus</i>, Val.</p> | <p>78. <i>Haplochilus spilauchen</i>, A.
Dum.</p> <p>79. <i>Haplochilus infra fasciatus</i>,
Gthr.</p> <p>80. <i>Neolebias unifasciatus</i>, n.
gen., n. spec.</p> <p>81. <i>Barbus ablabe</i>, sp. Blkr.</p> <p>82. " <i>camplacanthus</i>, sp.
Blkr., Var.</p> <p>83. <i>Clupea senegalensis</i>, C. V.,
Gthr.</p> <p>84. <i>Pellonula vorax</i>, Gthr.</p> <p>85. <i>Albula glossodonta</i>, sp. Forsk.</p> <p>86. <i>Notopterus aser</i>, Gthr.</p> <p>87. " <i>nigri</i>, Gthr.</p> <p>88. <i>Conger macrops</i>, Gthr.</p> <p>89. <i>Ophichthys semicinctus</i>,
Richds.</p> <p>90. " (<i>Sphagebranchus</i>)
<i>Büttikoferi</i>, n. sp.</p> <p>91. <i>Syngnathus Kaupii</i>, Blkr.</p> <p>92. <i>Tetrodon (Hemiconiatus) gut-</i>
<i>tifer</i>, Benn.</p> <p>93. " (<i>Gastrophysus</i>) <i>lae-</i>
<i>vigatus</i>, Lin.</p> <p>94. <i>Balistes maculatus</i>, Bloch.</p> <p>95. <i>Trygon margarita</i>, Gthr.</p> <p>96. <i>Polypterus palmas</i>, Ayres.</p> |
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NOTE II.

TWO NEW SPECIES OF THE GENUS HELOTA
FROM BURMA ¹⁾

DESCRIBED BY

C. RITSEMA Cz.

Among the *Helotidae* of Mr. A. Fry's collection, kindly sent to me for identification, there were two new species, both from Burma, one of which is very interesting on account of its being allied to the almost unknown *Helota thibetana* Westw. (*Mellii* Westw.) from Simlah, the type-specimen of which, a female from the old collection of Melly, belongs to the Natural History Museum at Geneva and was lent to me for comparison by the able Conservator of the named Museum, Mr. E. Frey-Gessner. As Westwood's descriptions of this species are very short (see Notes Leyd. Mus. Vol. XI, 1889, p. 110), I made use of this opportunity to describe the species at length; this description will be found at the end of the present Note.

The species of *Helota* contained in Mr. Fry's collection are the following:

Helota Vigorsii McLeay. 1 ♀, Java.

- » *longipes* Rits. 2 ♂, Assam: Manipur (Doherty).
- » *Oberthüri* Rits. 1 ♀, Assam: Patkai M^{ts} (Doherty).
- » *gemmata* Gorh. 3 ♀, Japan; 1 ♂ and 1 ♀, China bor. (Fortune).

1) See also for the *Helota*-species of Burma: Ann Mus. Civ. di Genova, vol. XXX, 1891, pp. 885 and 898, and Notes Leyd. Mus. Vol. XIII, 1891, p. 251.

Helota verrucosa, nov. spec. 1 ♂, Burma: Ruby Mines (Doherty); described in this Note.

- » *rotundata* Rits. 2 ♀, Burma: Momeit (Doherty); described in this Note.
- » *laevigata* Oberth. 1 ♂ and 1 ♀, India orient.
- » *tibialis* Rits. 1 ♂, Assam: Manipur (Doherty).
- » *Gestroii* Rits. 3 ♀, Burma: Karen Mts (Doherty).
- » *notata* Rits. 2 ♀, Burma: Ruby Mines (Doherty).
- » *Fryi*, nov. spec. 2 ♂ and 1 ♀, Burma: Karen Mts (Doherty); described in this Note.
- » *fulvitarsis* Rits. 1 ♂, Burma: Ruby Mines (Doherty); 1 ♀, Assam: Patkai Mts (Doherty).

Helota verrucosa, n. sp. ♂.

Allied to and resembling *Helota thibetana* Westw. (*Mellii* Westw.) of which the type-specimen, a female from Simlah, is before me. The new species differs, however, besides by the sexual characters, by the finer and closer punctuation on the elytra which agrees with that of the head and pronotum ¹⁾, by the more acutely crenulate lateral margins of the prothorax, and by the more strongly raised warts or tubercles on pronotum and elytra; on the elytra these warts are more irregularly placed in the new species than in *thibetana* where they are arranged in distinct rows; finally, in *thibetana* the sutural interstice is smooth and separated from the disk of the elytra by a row of deeply impressed punctures, whereas in *verrucosa* the sutural interstice is sculptured and separated from the disk by a very fine impressed line.

Length 9½ mm. — Above finely rugose in consequence of a very dense punctuation but provided with irregularly placed glossy warts or tubercles of different size and shape. The colour of the upper surface is coppery bronze (the

1) In *thibetana* the punctures on the elytra are slightly larger than those on the head and pronotum, and along the middle somewhat wider apart.

elytra spotted with green along the lateral margins), that of the tubercles bronze green, that of the scutellum bright metallic green; the antennae are testaceous, and the anterior portion of the sides of the pronotum as well as two pairs of convex roundish spots on the elytra (the anterior pair distinctly larger than the posterior one) flavous. — The under surface is flavous, with the head (except the throat), the sides of the sterna (except the anterior portion of those of the prosternum), and the elytral epipleurae, bronze green; the space between the anterior coxae shows a metallic green tinge, which is likewise the case with the coxae of the three pairs of legs; the trochanters are dark pitchy, the femora flavous with the apical portion dark pitchy with metallic green tinges on the knees, the tibiae flavous with the base and about the apical half dark pitchy, the tarsi pitchy brown with the base of the claw-joint and that of the claws themselves, flavous.


The head very densely punctured, the punctures somewhat finer on the narrowed front portion; on the disk between the eyes two slightly divergent longitudinal elevations; the green coloured mandibles finely but very distinctly punctured.

The prothorax broader at the base than long, narrowed in regularly curved lines towards the front margin which is curved backwards making the lateral angles slightly protruding; the base bisinuate, the middle lobe truncate, the lateral angles acute and slightly directed inwards; the lateral margins very distinctly crenulate, each with ten or eleven crenulations¹⁾. The upper surface very densely punctured and provided with more sparingly punctured raised patches or tubercles which are arranged in the same manner as in *sinensis* Oll. and *thibetana* Westw. but more strongly raised. The scutellum nearly circular, glossy, provided with a few large punctures, and broadly impressed along the middle.

1) In *thibetana* these crenulations are broader.

The elytra slightly narrowing towards the apices which are nearly conjointly rounded, narrowly debiscent at the suture and provided with a very minute sutural tooth; the lateral margins are strongly serrate from the base to the apex. The elytra are very densely covered with punctures equal in size to those on the head and pronotum, and the sculptured sutural interstice is separated from the disk by a fine impressed line; they are provided, besides with the four convex flavous spots, with rather irregularly placed glossy tubercles of different size and shape, of which those on the inner half are larger than those on the outer half.

The under surface of the head (except the throat) is covered with deep punctures; on the sides of the prosternum the punctures are larger, wider apart and evanescent towards the front angles, the intercoxal part has raised lateral margins and an obsolete punctuation; the metallic coloured lateral portions of the metasternum are deeply punctured, the sparsely punctured flavous portion shows on both sides of the median line an elongate ovate somewhat oblique impression which is covered with an erect fulvous pubescence. The abdomen is very finely punctured, somewhat more strongly so at the sides; the basal ventral segment is about as long as the three following segments taken together, and provided on the middle with a large but shallow finely punctate impression, which is as broad as the distance between the posterior coxae and extends from the base down to two thirds of the length of the segment; this impression shows at its base a swollen transverse streak which is divided by a short longitudinal groove, whereas the posterior margin of the impression is angularly raised in the middle; the 2nd, 3rd and 4th segments are equal in length to each other; the 5th or last is as long as the two preceding segments, broadly rounded posteriorly and provided with a large but shallow impression which is distinctly punctured and thinly pubescent and occupies the whole length

of the segment; the hinder margin of the apical dorsal segment has the shape of an accolade: . The dark coloured tip of the femora is strongly punctured, the tibiae very finely so; the anterior tibiae are curved and their inner margin, at a small distance from the apex, somewhat angularly enlarged, whereas a very minute dilatation is present on the outer margin between the first named dilatation and the middle of the tibia.

Hab. Burma: Ruby Mines (Doherty). — A single male specimen.

Helota rotundata Rits. ♀.

Agreeing with the ♂¹⁾, but the anterior tibiae but very slightly curved and the intermediate and posterior tibiae not constricted before the apex; the elytra separately rounded at the apices and provided with a very minute sutural tooth; the last ventral segment regularly rounded behind.

Hab. Burma: Momeit (Doherty). — Two specimens, one of which is now in the Leyden Museum.

Helota Fryi, n. sp. ♂ and ♀.

Resembling *Helota dubia* Rits.²⁾ and *affinis* Rits.³⁾ but broader, with the elytral spots differently placed (the 1st pair between the 3rd and 7th striae, the 2nd pair between the 3rd and 6th), and the apices of the elytra rounded in both sexes.

Length 9 mm. — Elongate, shining, above bronze green with faint coppery tinges; the antennae pale reddish testaceous with the terminal joint of the club infusate; each elytron provided with two flavous spots which are narrowly surrounded with bluish black; the anterior spot is

1) Ann. Mus. Civ. di Genova, vol. XXX, 1891, p. 891.

2) Ann. Mus. Civ. di Genova, vol. XXX, 1891, p. 901.

3) Notes Leyd. Mus. vol. XIII, 1891, p. 253.

situated between the 3rd and 7th, the posterior one between the 3rd and 6th striae. Underneath the head (except the middle of the throat), the lateral portions of the prosternum and the elytral epipleurae are golden green, the rest is reddish testaceous with the apical margin of the last ventral segment pitchy; the legs are reddish testaceous, with the apex of the femora and the basal half of the tibiae ¹⁾ metallic green, the extreme apex of the tibiae and the tarsi pitchy, the base of the claw-joint rufous.

Head strongly and densely punctured, on the narrowed front portion the punctures are much finer.

Prothorax slightly broader at the base than long, narrowing towards the front margin in nearly straight lines; the front margin straight, the front angles not at all prominent, subangular, the basal ones acute, the base bisinuate, the median lobe rounded. The pronotum strongly and rather densely punctured, the punctures larger and more widely separated towards the base; three smooth spaces at the base: one in the middle and two between the middle and the sides. The scutellum strongly transverse.

Elytra elongate, slightly narrowing towards the end and here separately rounded in both sexes. Each elytron with ten regular striae of punctures which become larger towards the sides; those interstices which join the apical margin are costate at the end.

Under surface of the head (except the middle of the throat) provided with large punctures, the metallic coloured lateral portions of the prosternum likewise strongly punctured, the middle portion much more finely; the elytral epipleurae, legs and abdomen apparently impunctate, with the exception of the apical ventral segment which is very finely punctured towards the posterior margin especially in the male.

♂. Anterior tibiae slightly curved, the inner margin

1) On the anterior tibiae the basal third only.

with a deep round notch on the apical half and enlarged at the end; the basal joints of the anterior tarsi slightly enlarged and densely fringed beneath with long colourless hairs; the inner margin of the posterior tibiae with a very minute angular tooth at some distance from the apex, and the space between the tooth and the apex finely pubescent; the intermediate and posterior tarsi very slender and elongate; the apical ventral segment very broadly rounded, almost subtruncate, posteriorly, and densely fringed with short pale coloured hairs.

♀. The legs simple and less elongate, the apical ventral segment slightly notched at the end.

Hab. Burma: Karen Mts (Doherty). — Two males and one female. One of the males is now in the Leyden Museum.

List of the *Helota*-species known as yet from Burma.

Feae Rits. 2 ♀, Karen Mts (Fea). — Genoa and Leyd. Museum.

ventralis Rits. 2 ♀, Ruby Mines (Doherty). — Coll. Oberthür and Leyd. Mus.

verrucosa Rits. 1 ♂, Ruby Mines (Doherty). — Coll. Fry.

curvipes Oberth. 1 ♀ Karen Mts (Fea). — Genoa Museum.

Dohertyi Rits. 1 ♂, Ruby Mines (Doherty). — Coll. Oberthür.

serratipennis Rits. 2 ♂ and 4 ♀, Karen Mts (Fea). — Genoa and Leyd. Mus.

rotundata Rits. 1 ♂, Karen Mts (Fea); 2 ♀, Momeit (Doherty). — Genoa Mus., coll. Fry and Leyd. Mus.

Gestroi Rits. 1 ♂, Karen Mts (Fea); 1 ♀, Ruby Mines (Doherty) and 3 ♀, Karen Mts (Doherty). — Genoa Mus., coll. Oberthür, coll. Fry and Leyd. Mus.

notata Rits. 7 ♀, Ruby Mines (Doherty). — Coll. Oberthür, Leyd. Mus. and coll. Fry.

dubia Rits. 1 ♀, Ruby Mines (Doherty). — Coll. Oberthür.

affinis Rits. 1 ♀, Ruby Mines (Doherty). — Coll. Oberthür.

Fryi Rits. 2 ♂ and 1 ♀, Karen Mts (Doherty). — Coll. Fry and Leyd. Mus.

Notes from the Leyden Museum, Vol. XVI.

immaculata Rits. 4 ♂ and 8 ♀, Karen Mts (Fea). — Genoa and Leyd. Mus.

difficilis Rits. 2 ♂, Karen Mts (Fea). — Genoa and Leyd. Mus.

fulvitaris Rits. 1 ♂, Ruby Mines (Doherty). — Coll. Fry.

Finally I may conclude with an ample description of

Helota thibetana Westw. ♀.

Helota thibetana Westwood, Ann. and Mag. of Nat. Hist. Vol. VIII, 1842, p. 123 ¹⁾. — Ritsema, Stettin. Ent. Zeit. 1876, p. 19. — Olliff, Cist. Ent. Vol. III, pp. 54 and 56 (1883). — Ritsema, Notes Leyd. Mus. Vol. XI, 1889, p. 110; vol. XIII, 1891, p. 226.

Helota Mellii Westwood, Cabin. of Orient. Entom. p. 86; pl. 41, fig. 8, ♀ (1848). — Ritsema, Notes Leyd. Mus. Vol. XI, 1889, p. 110.

Length 9¼ mm. — The upper surface rugose, more distinctly on the outer half of the elytra than along the middle, coppery bronze, the elytra indistinctly bordered with green at the sides, and provided, besides with four small convex flavous round spots, with rows of glossy black tubercles of different size and shape; the mandibles greenish bronze; the antennae fulvous, their basal joint and the 1st joint of the club palest, the two apical joints of the club infusate; the extreme tip of the anterior angles of the pronotum fulvous. — The under surface is pale fulvous; the head (except the throat), the sides of the sterna (except the tip of the anterior angles of the prosternum) and the elytral epipleurae, bronze green; the space between the anterior coxae shows a metallic green tinge, which is also the case with the pitchy brown coxae of the three pairs of legs; the trochanters are brown, the femora pale fulvous with the apex dark pitchy and with a bronze green hue on the knees, the tibiae alternately pitchy brown and pale fulvous which colours are, however, not sharply defined; the tarsi dark brown with the

1) Published in October 1841.

base of the claw-joint and that of the claws themselves pale fulvous.

Head strongly punctured except on the clypeus where the punctures are finer; on the disk, between the eyes, an indistinct U-shaped elevation which has the open side directed towards the clypeus; the mandibles are finely and closely punctured.

Prothorax broader at the base than long, narrowed and emarginate in front, bisinuate at the base where the acute lateral angles are directed inwards in consequence of the regularly curved sides which are very coarsely crenulate, each of them having 8 or 9 crenulations, the middle lobe subtruncate; the anterior angles protruding; the upper surface rugosely punctured and provided with some more sparingly punctured raised patches and glossy tubercles which are arranged quite as in *Helota sinensis* Olliff. The scutellum strongly transverse.

Elytra widest at some distance behind the shoulders, then slightly narrowing and, near the apex, more suddenly narrowed in a concave line; the apices are dehiscent at the suture and acutely pointed; the lateral margins, especially at the apical third, minutely and distantly serrulate. The elytra are strongly and closely punctate all over, more closely, however, on the outer half than along the middle where the punctures are moreover somewhat larger than on the head and pronotum; the sutural interstice is impunctate and accompanied by a regular stria of small but deeply impressed punctures; the elytra are provided, besides with four small convex flavous round spots, with several more or less roundish or narrow and elongate glossy black tubercles of different size, arranged on each elytron in six longitudinal rows of which the first (that on the scutellar region) is very short; the convex flavous spots, which are nearly equal in size to each other, are situated in the 3rd row; near to the lateral margins the tubercles are very narrow, elongate and more strongly raised; the acute apices have each a sharply raised keel along the middle,

which is the continuation of the second row of tubercles.

The under surface of the head (except the throat where it is impunctate) covered with strong punctures which are more closely set on the lateral portions; the sides of the prosternum strongly but not closely punctured, the middle portion more finely so, the space between the anterior coxae bounded laterally by an oblique raised margin; the metasternum with a few large punctures on the sides and some very minute ones on the middle; along the middle an impressed line is present which is broader and deeper on the apical half; the elytral epipleurae have a few fine punctures near the base; the ventral segments are very finely punctured, somewhat more strongly so at the sides; the basal segment is slightly longer than the 2nd and 3rd together, the 2nd and following ones equal in length to each other; the apical one broadly rounded and with a semi-ovate impression at the end, the hinder margin of this impression straight; at the base of the first ventral segment between the posterior coxae, a few larger punctures and longitudinal scratches may be observed. The dark coloured tips of the femora are strongly, the tibiae very finely punctured; the anterior tibiae are nearly straight.

The above described specimen, a female, the only one I have seen, belongs to the Geneva Museum, where it forms part of the late A. Melly's collection. It is said to be the type-specimen of *Helota Mellii* Westw. which came from Simlah. Westwood says (Cab. Or. Ent. *l. c.*) »Simlah, in Thibet'', but this is certainly a mistake. Simlah is situated in the Province Punjab (N. W. Hindostan). — About the identity of *H. thibetana* and *Mellii* there can be, I believe, no doubt.

Leyden, July 1893.

Notes from the Leyden Museum, Vol. XVI.

NOTE III.

A NEW SPECIES OF THE LONGICORN
GENUS ZONOPTERUS

DESCRIBED BY

C. RITSEMA Cz.

It is very closely allied to *Zonopterus magnificus* Bates ¹⁾ from Mount Kina Balu (North Borneo) and strongly resembles that species of which I have a female example from Mr. Oberthür's collection before me. The new species, of which Dr. J. Bosscha captured a female specimen near Sambas (West Borneo), differs however from *magnificus* by the narrower and more orange yellow coloured elytral fascia, which moreover is farther removed from the base of the elytra, by the somewhat otherwise coloured antennae (the three basal joints and the basal half of the 4th joint are black), by the fulvous anterior tarsi, by the more slender posterior legs and, last not least, by the shape of the apex of the last (5th) ventral segment which is deeply notched in the middle in the female of *magnificus*, entire however in the same sex of the new species.

I propose to call the new species, in honour of the captor of the described specimen,

Zonopterus Bosschae.

Length from the front margin of the inter-antennary ridge to the apex of the elytra $33\frac{1}{2}$ mm., breadth at the

1) Proc. Zool. Soc. London, 1889, p. 891.

shoulders 10 mm. — Black, with the apical half of the 4th antennal joint as well as the succeeding joints pale orange yellow, a similarly coloured band across the middle of the elytra ¹⁾, and the three basal joints of the anterior tarsi fulvous with a black point in the middle of the first and second one; moreover the lateral margins of the three basal joints of the intermediate tarsi are dark brown. The black portions show metallic green or blue tinges, with the exception of the legs and the dark joints of the antennae. The face and vertex of the head, the pronotum, the scutellum, and the elytra (except the yellow band) covered with a black velvety pubescence by which the sculpture is hidden, whereas a fulvous pubescence occurs on the fore-tibiae, except along their outer margin; the coxae, and the metasternum and 1st—4th abdominal segment posteriorly, with a silvery pile.

The clypeus (except the brown coloured front margin which is smooth) is opaque in consequence of a very dense sculpturing which is fine in the middle, coarse on the sides; a faint groove runs along the middle as a continuation of the deep channel which divides the inter-antennary ridge; moreover the clypeus is separated from the inter-antennary ridge by a slightly curved groove. The base of the mandibles and the cheeks are irregularly sculptured, whereas a few wrinkles are present behind the eyes. The scape of the antennae is strongly but rather distantly punctured; the 3rd joint is slender and as long as if not slightly longer than the 4th and 5th taken together.

The sides of the prothorax are rounded, glossy and impunctate.

The elytra are gradually narrowing towards the apices and show each three faint longitudinal costae.

The under surface of the head shows irregularly confluent transverse wrinkles. The prosternum is coriaceous, its

1) The distance from the base of the elytra to the front margin of the band is equal to the broadness of the latter.

intercoxal part rounded and of a fulvous colour. The metasternum is provided along the middle with an impressed line. The femora are strongly punctured, the posterior ones, which are very slender, more closely so. The apical ventral and dorsal segments of the abdomen are of the same shape, viz. subtruncate with broadly rounded angles, and show, besides a fine but distinct punctuation, a fine longitudinal keel which is evanescent towards the base.

Hab. Borneo occ.: Sambas (Dr. J. Bosscha). — A single female specimen in the Leyden Museum.

Leyden Museum, December 1893.

NOTE IV.

ON CYCLOMMATUS SQUAMOSUS RITS.

BY

C. RITSEMA Cz.

In vol. XIV of the „Notes” (p. 45—48) I described under the above name two male Lucanidae, one as belonging to the forma major, the other as belonging to the forma minor of the species: they were the only specimens with which I was acquainted at that date. Now Mr. Oberthür sends me a beautiful series (18 ♂♂ and 3 ♀♀) of a *Cyclommatus*-species, found near Sandakan, North Borneo, and utters the opinion that it may belong to *Cyclommatus insignis* Parry = *squamosus* Rits. A comparison of the Sandakan-specimens with the type-specimen of *insignis*, kindly forwarded to me by Mr. Oberthür, convinced me of their identity. Moreover, the specimen from Brunei, described by me as the major development of *C. squamosus*, proved to be likewise identical with the Sandakan-species (*insignis* Parry), but this can not be said of the specimen from Sintang described by me as the minor development. The latter undoubtedly belongs to a distinct species for which the name *squamosus* may be maintained. It differs from *insignis* (comparing specimens of similar development) by the dentition of the basal portion of the mandibles; by the more deeply impressed head which is thicker (the difference is very conspicuous when the head is seen sideways) and has the front more steeply sloping; by the more strongly protruding front angles of the thorax, which moreover are broader, their outer margin being much more strongly curved; by the narrower and parallel-sided elytra; by the slightly thicker tibiae, of which the anterior pair are more strongly spined along the outer edge, etc.

Leyden Museum, January 1894.

Notes from the Leyden Museum, Vol. XVI.

NOTE V.

ON A COLLECTION OF HELOTIDAE FROM KURSEONG ¹⁾

BY

C. RITSEMA Cz.

Mr. René Oberthür of Rennes has received from his friend the R. P. Bretaudeau an interesting lot of *Helotidae* brought together in the environs of Kurseong. This lot, sent to me for identification by Mr. Oberthür, contains the following species:

Fairmairei Rits., several examples of both sexes.

Desgodinsi Rits., a single female described in this Note.
attenuata n. sp., two female specimens, described in this Note.

laevigata Oberth., two female specimens.

Severini Rits., two female specimens.

Boysi Rits., several examples of both sexes described in this Note.

Bretaudeaui n. sp., several examples of both sexes, described in this Note.

fulvitaris Rits., several examples of both sexes.

Helota Desgodinsi Rits. ♀.

Agreeing with the ♂ ²⁾, but the anterior tibiae but very slightly curved, the apices of the elytra pointed, the

1) In my enumeration of the *Helota*-species known from Sikkim and Darjeeling (Notes Leyd. Mus. Vol. XV, 1893, p. 140), I erroneously indicated Kurseong as situated in Sikkim. It lays, however, in the adjacent district Darjeeling.

2) Notes Leyd. Mus. Vol. XV, 1893, p. 131.

middle of the metasternum without pubescence, and the apical ventral segment flattened behind and broadly truncate, the margin of the truncation slightly thickened except in the middle; a few large hair-bearing punctures are present on the flattened portion laterally.

A single specimen. — The unique known male specimen of this species, which was found in the environs of Pedong in Sikkim (Desgodins), likewise belongs to Mr. Oberthür.

Helota attenuata, n. sp. ♀.

Closely allied to *Helota rotundata* Rits. from Burma¹⁾, but the shape of the new species is less parallel: it is broader in the shoulders and more attenuated anteriorly and posteriorly; the prothorax is decidedly more transverse and its sides are more strongly curved, the anterior angles less prominent and less rounded, and the pronotum is more strongly punctured; moreover the elytral epipleurae, which are dark bronze in *rotundata*, are reddish testaceous in the new species.

Length 9 mm. — Subshining; above dark bronze with purplish tinges especially on the head and pronotum; the two basal joints of the antennae reddish (the scape with a fuscous spot in front), the following joints pitchy brown, the club darkest; the anterior angles of the pronotum narrowly edged with fulvous, the scutellum coppery; the elytra provided with two pairs of yellow spots situated between the 3rd and 6th striae and surrounded with bluish black. The colour of the underside (the elytral epipleurae included) is reddish testaceous, with the exception of the dark bronze head (the throat, however, is reddish testaceous); the legs are reddish testaceous, the tip of the femora metallic green, the base and apex of the tibiae as well as the tarsi pitchy with a slight bronze hue.

1) Ann. Mus. Civ. di Genova, vol. XXX, 1891, p. 891, ♂, and Notes Leyd. Mus. Vol. XVI, 1894, p. 101, ♀.

Head strongly but rather remotely punctured in the raised middle portion, very closely between the raised portion and the eyes, very minutely on the narrowed front portion.

Prothorax transverse, strongly attenuated in regularly curved sides towards the front margin, the front angles but very slightly prominent, subangular, the sides faintly crenulate, the base deeply bisinuate, the lateral angles acute and slightly directed inwards, the median lobe subtruncate; the upper surface strongly but rather irregularly punctured, the punctures on the middle considerably finer than on the sides, an impunctate spot in front of the scutellum, and on each side of the median lobe an oblique shallow impression provided with large punctures. The scutellum transverse, broadly rounded behind, impunctate but impressed in the middle.

Elytra conspicuously narrowing in straight lines towards the apices which are almost conjointly rounded. Each elytron with ten regular striae of punctures which become slightly larger towards the sides; the interstices are sparsely and most finely punctured, and become slightly costate on the apical portion, especially the 3rd and 9th.

The underside of the head is strongly punctured, the middle of the throat, however, impunctate; on the lateral portions of the prosternum the punctures are rather large, on the sides of the metasternum they are much finer; the middle of the prosternum is finely and sparsely punctured, that of the metasternum impunctate; the abdomen is apparently impunctate in the middle, distinctly punctured, however, on the sides and on the last segment which latter is truncate at the tip with rounded angles. The metallic coloured tip of the femora and the tibiae are distinctly punctured; the anterior tibiae slightly curved.

Two female specimens, one of which is now in the collection of the Leyden Museum.

Notes from the Leyden Museum, Vol. XVI.

Helota Boysi Rits. ♂ and ♀.

This species was described by me in 1889 ¹⁾ from a single male example belonging to the Oxford Museum. As the present collection contains several specimens of it, males and females, I give here a description of both sexes.

The species is allied to *Helota notata* Rits. from Burma, but it is larger, and more strongly punctured, and has the apices of the elytra otherwise shaped. The male is easily recognizable by the flattened and truncate appendage at the apex of the inner margin of the anterior tibiae.

Length 8—9 mm. — Narrow and elongate, shining; above metallic green with coppery and purple tinges; the antennae testaceous, the two apical joints of the club infusate; each elytron provided with two flavous spots situated between the 3rd and 7th striae ²⁾ and surrounded with purple. — Underneath the head (except the middle of the throat), the lateral portions of the prosternum and the elytral epipleurae bright golden green, the remaining reddish testaceous; the legs reddish testaceous, with the apex of the femora and the base of the tibiae metallic green; on the tibiae the green colour is slightly prolonged along the outer edge; the tarsi (with the exception of the basal half of the claw-joint) brownish.

Head strongly and densely punctured, the punctures on the middle portion larger and wider apart.

Prothorax trapezoidal, being slightly attenuated in straight lines to the front margin which is likewise straight, the anterior angles broadly rounded, not at all produced; the base deeply bisinuate, the lateral angles acute. The upper surface rather regularly densely covered with large deep punctures, an impunctate longitudinal streak in front of the scutellum. The scutellum broadly rounded behind and impunctate.

1) Notes Leyd. Mus. Vol. XI, 1889, p. 189.

2) In some individuals the posterior yellow spot is situated between the 3rd and 8th striae.

The elytra nearly parallel, the apices conjointly notched at the suture, forming at the bottom of the notch a minute sutural angle. Each elytron is provided with ten regular striae of deeply impressed punctures which become larger towards the sides; the interstices become costate towards the end, especially the 3rd and 9th.

The under surface of the head (with the exception of the middle of the throat) remotely covered with large punctures; on the metallic lateral portions of the prosternum the punctures are still larger, the pale coloured middle portion is nearly impunctate; the sides of the metasternum are very distinctly punctured; the abdomen is apparently impunctate, with the exception of the apical segment which shows a very fine punctuation and which is truncate behind; the legs are impunctate, the metallic green portions excepted which have a few punctures.

♂. Anterior tibiae slightly curved on the apical half and provided at the apex on the inside with a flattened and truncate black appendage which is directed forward and inward; the basal joints of the anterior tarsi are enlarged and densely covered beneath with a long pale coloured pubescence; the tarsi of the middle and hind legs are very slender and elongate, as long as if not slightly longer than the tibia; the posterior tibiae with a black line along the inner edge of the apical half. The apices of the elytra are conjointly notched at the suture, forming at the bottom of the notch a minute sutural angle on each elytron. The apical ventral segment broadly truncated behind, the lateral angles rounded.

♀. Legs simple, the posterior tibiae without black line on the inner edge. The common sutural notch on the apex of the elytra deeper than in the male, and the apices consequently narrower. The apical ventral segment more narrowly truncated behind than in the male.

Several examples of both sexes.

Obs. The specimens from Kurseong (Braet), Pedong (Desgodins) and Darjeeling (Christie), regarded by me with

doubt as the female sex of *Helota Boysi* Rits. ¹⁾), belong to the following species.

Helota Bretaudeaui, n. sp. ♂ and ♀.

This species is closely allied to *Helota dubia* Rits. ²⁾ and *affinis* Rits. ³⁾ from Burma, of which the female sex only is known. Likewise it is allied to *Helota Fryi* Rits. ⁴⁾ from Burma, which species is broader and has the apices of the elytra rounded in both sexes; moreover the fore tibiae of the male are quite differently shaped.

Length 8—9 mm. — Narrow and elongate, shining, above bronze green with coppery tinges, the antennae testaceous, the joints often with a dark spot, the club more or less infusate; each elytron provided with two flavous spots which are surrounded with purplish and of which the posterior one is unvariably placed between the 3rd and 7th striae; the situation of the anterior spot, however, is somewhat variable: in most of the specimens before me it is placed between the 3rd and 7th striae, in some others it occupies the space between the 4th and 7th striae, whereas in a few specimens the anterior spot on the left elytron is situated between the 4th and 7th, on the right one between the 3rd and 7th striae. — Underneath the head (except the middle of the throat), the lateral portions of the prosternum and the elytral epipleurae golden green, the rest testaceous; the legs are testaceous with the apex of the femora and the basal portion of the tibiae metallic green; on the tibia the green colour is slightly prolonged along the outer edge; the tarsi are dark brown, with the exception of the basal half of the claw-joint which is pale testaceous.

Head deeply and densely, almost rugosely punctured,

1) Notes Leyd. Mus. Vol. XV, 1893, p. 140.

2) Ann. Mus. Civ. di Genova, vol. XXX, 1891, p. 901.

3) Notes Leyd. Mus. Vol. XIII, 1891, p. 253.

4) Notes Leyd. Mus. Vol. XVI, 1894, p. 101.

the punctures on the middle portion larger and somewhat wider apart.

Prothorax narrowing in straight lines towards the front margin which is straight, the front angles broadly rounded, not at all produced; the base deeply bisinuate, the lateral angles acute; the upper surface regularly densely covered with large deep punctures which leave however an elongate patch in front of the scutellum free. The scutellum is broadly rounded behind and impunctate.

The elytra are slightly narrowing in straight lines towards the apices; each elytron is provided with ten regular striae of deeply impressed punctures which become larger towards the sides; the interstices become more or less costate towards the end, especially the 3rd and 9th.

The under surface is very shining; the head (except the middle of the throat) strongly punctured; the punctures on the metallic coloured lateral portions of the prosternum large and deep, those on the testaceous middle portion minute; on the sides of the metasternum a few fine but distinct punctures are present; the middle of the metasternum and the abdomen impunctate, the apical ventral segment, however, extremely finely punctured; the legs have a few large punctures.

♂. Anterior tibiae distinctly curved, and with a notch on the inside of the apical half; the notch accompanied by a flattened elongate triangular tooth which is directed inwards; the top and the upper margin of this tooth are pitchy; the space between the tooth and the apex of the tibia is widened out, and as well as the tooth itself provided with long colourless hairs; the basal joints of the anterior tarsi are slightly widened out and densely fringed beneath with long colourless hairs; the middle and hind tibiae are faintly constricted on the outer edge of the apical half; the hind tibiae are moreover provided on the inner edge, a little before the apex, with a very minute angular tooth which is preceded by a short black line; the space between the tooth and the apex is finely pubescent.

The apical ventral segment truncate posteriorly. The elytra not prolonged at the end, the apices truncate between the 3rd interstice and the suture.

♀. Legs simple, the apical ventral segment truncate posteriorly, somewhat more narrowly however than in the male. The elytra slightly prolonged, the apices narrower than in the male, and more or less obliquely truncate between the 3rd interstice and the suture.

Several examples of both sexes.

Obs. The specimens from Kurseong (Braet), Pedong (Desgodins) and Darjeeling (Christie), regarded by me with doubt as the female sex of *Helota Boysi* Rits.¹⁾, belong to *Helota Bretaudeaui* Rits.

In a lot of Beetles from Pedong (Desgodins) Mr. Oberthür found a male example of *Helota pustulata* Rits. This sex differs from the female, which has been described by me in the Notes from the Leyden Museum, vol. XV, 1893, p. 133, in having very strongly curved anterior tibiae, and narrowly, conjointly rounded apices to the elytra.

Leyden Museum, December 1893.

1) Notes Leyd. Mus Vol XV, 1893, p. 140.

NOTE VI.

REPTILES FROM TIMOR AND THE NEIGH-
BOURING ISLANDS.

BY

Dr. Th. W. VAN LIDTH DE JEUDE.

The study of the fauna of the Timor group is one of the most interesting subjects of zoogeography, the islands of this group having their own peculiar inhabitants besides a great many species which they have in common with Java and still other species that are strictly Australian forms. Wallace already in his „Malay Archipelago” drew attention to this fact, and stated that with regard to the birds 47 species ought to be regarded as being derived from Java, whilst 48 species originated from Australia. With regard to the Papilionidae Wallace mentions 4 species peculiar to Timor, 3 also found in Java and one Australian form.

Every contribution to our knowledge of this interesting fauna can claim the attention of all zoologists concerned in zoogeography, and I feel quite happy in being enabled to give a list of reptiles, collected at the islands of the Timor group by Dr. H. ten Kate, who afterwards kindly presented them to the Leyden Museum.

Though the collection is not a very large one, it is a very valuable one as it contains 19 species, and as habitats such as the island of Soemba, the island of Groot Bastaard (N. of Flores) and the island of Adoenara (E. of Flores) are seldom represented in zoological collections.

Notes from the Leyden Museum, Vol. XVI.

*Chelonians.*1. *Chelodina novae-guineae* Blgr.

Three specimens from Rotti agree so closely with the description and the figures given by Boulenger of *Chelodina novae-guineae* that I am quite sure they do belong to this species. The intergular is *more* than three times the length of the suture between the pectorals, in this point agreeing with Boulenger's figure, although his description mentions intergular *nearly* three times as long as the suture between the pectorals. The anals of the young specimen are relatively larger than those of the adult ones. In one specimen, long 18 cm., the suture between the anals is as large as the suture between the abdominals and more than half the length of the intergular, in the two smaller specimens, each 10 cm. long, the suture between the anals is larger than the suture between the abdominals and as large or a little larger than gulars and intergular together. No one of the three specimens has the posterior part of the carapace so much rounded as indicated by Boulenger's figure, in all of them this posterior part ends in an obtuse triangular point. Plastron of a reddish brown colour without the broad black lines along the sutures between the shields, such as are characteristic with *Chelodina longicollis*.

It is a peculiar fact that the specimens of this species seem to show a tendency to augmenting the total number of their shields by dividing one or more of them. So in Boulenger's figure the posterior vertebral shield is divided into two shields lying one behind the other, the number of vertebrales thus rising till six. In one of our small specimens this posterior vertebral shield is divided into four, so forming six vertebrales and 8 costal shields; in the other small specimen the posterior vertebral shield is divided lengthwise into three shields, thus raising the number of costal shields to eight; whilst our largest specimen has the supracaudal or the last marginal shield on the

Notes from the Leyden Museum, Vol. XVI.

left side divided into two, there thus being one shield more on the left than on the right.

Lizards.

2. *Hemidactylus frenatus* D. B.

Several specimens from the islands of Soemba, Rotti, Adoenara and Groot-Bastaard.

3. *Hemidactylus platyurus* Schn.

One specimen from Soemba, two from Groot-Bastaard.

4. *Hemidactylus Tenkatei* nov. spec.

Digits quite free, free distal joints of digits long, dorsal tubercles large conical in 16 rows, tail annulate, the first ring with 8, the following with 6 much enlarged tubercles, 3 or 4 lamellae under the inner, and 7 or 8 under the median toe.

Snout somewhat larger than the distance between the eye and the ear-opening, nearly twice the diameter of the orbit; forehead concave, ear-opening small roundish. Rostral quadrangular with a median cleft; nostral pierced between the rostral the first upper labial and three nasal shields, the first nasal not in contact with its fellow of the other side. Eight or nine upper- and eight lower-labials; mental large triangular with two pairs of chin-shields. Back covered with small granules intermixed with large conical tubercles arranged in 16 series on the middle of the body; the tubercles of the 4 median innermost series somewhat elongate with an indication of a keel. Tubercles on the hinder part of the head round and very small. The diameter of the largest tubercle on the back nearly equals the diameter of the earopening. Underparts of the head and neck with small granules, belly with rather large cycloid scales. Limbs moderate, the upper part of the thigh covered with granules intermixed with tubercles; fingers free, 3 or 4 lamellae under the inner and 7 or 8 under the median toe. Tail depressed, annulate with spine-like tubercles, underneath with a row of

large transverse plates. Colour of the upper parts gray with irregular dark spots, under parts white.

Two adult and one young specimen from Rotti.

Measurements taken on the largest specimen:

Total length	98 mm.
Head	16 »
Width of head	10 »
Body	35 »
Fore limb	17 »
Hind limb	21 »
Tail	47 »

5. *Gehyra mutilata* Wiegman.

Six specimens from Rotti.

6. *Gecko verticillatus* Laur.

Specimens from Timor, Rotti, Soemba and Adoenara.

7. *Draco timorensis* Kuhl.

One specimen captured in Timor and three from Rotti, with a row of enlarged and keeled scales running along each side of the vertebral line. These specimens agree, in having these two rows of enlarged scales with specimens already in our collection and also captured at Timor and Rotti and with one specimen from Samao described by Schlegel under the name: *Draco viridis* var. *samaoensis*. As to the length of the hind limb, Boulenger states that the specimen in the British Museum reaches with its adpressed hind limb midway between the elbow and the axil of the adpressed forelimb. In most of our specimens this is not the case, the adpressed hind limb only reaching the elbow, still there are among our specimens two which agree in this point with the specimen in the British Museum. As to the number of the upper labials in most of our specimens it amounts to nine, still the number of these scales is not always constant, our specimen from Samao f. i. having 10 upper labials at its right and only 8 at its left side.

In one large female specimen from Rotti, measuring 9 cm. from the tip of the snout to the beginning of the tail,

Notes from the Leyden Museum, Vol. XVI.

were found five nearly fullgrown eggs measuring 12 mm. by 7,5 mm.

8. *Varanus timorensis* Gray.

One specimen from Timor, another from Rotti.

9. *Lygosoma florense* Weber.

In Dr. ten Kate's collection there are 11 specimens of this species from Groot-Bastaard, one specimen from Lantaoeka in Flores, and 2 specimens from Adoenara. All these specimens agree in the presence of 5 to 6 auricular lobes, in having only one loreal shield behind the nasal, in having the frontonasal nearly twice as broad as long and in having a straight broad suture between the rostral and the frontonasal (in some specimens the forepart of the frontonasal forms even a convex line). In all our specimens the frontal is in contact with four supraoculars, the first supraocular never being twice as long as the second one. Subdigital lamellae under the fourth toe 27 to 29 in number, 44 to 50 series of scales round the body. There are some specimens which have the supraorbital region much swollen, in others that region is almost flat; some specimens have a black throat, in others the scales below the head are more or less spotted with black, in still others there is no black at all, the throat being of the same colour as the belly¹).

This species was already represented in our collections by several specimens collected by Müller and Macklot in the islands of Timor and Samao, and were labelled *Scincus melanopogon* n. sp.

Duméril and Bibron's species *Lygosoma melanopogon* comprises three species of the more recent authors viz. *L. variegatum* Ptrs, *L. Meyeri* Doria and *L. florense* Weber. The two latter species occur or at least used to occur in the islands of the Timor group as we have in our collections also specimens of *L. variegatum* captured by Müller

1) Prof. M. Weber had the kindness to compare one of our specimens with his types.

and Macklot in Timor and Samao. These specimens though also labelled *Sc. melanopogon* were separated from the specimens of *L. florense*. Now Duméril and Bibron in giving the synonymy of *Lygosoma melanopogon* quote besides »*Scincus naevius* Péron, Mus. de Paris" also »*Sc. melanopogon* Müller, Mus. de Leyde" and »*Sc. erythrolamus* Müller, Mus. de Leyde". So there can be little doubt that already Sam. Müller noted the difference between two narrowly related *Lygosoma*-species viz. *L. florense* and *L. variegatum* found side by side in the Timor-group and named them *Scincus melanopogon* and *Sc. erythrolamus*. As however he never gave a description or a figure of these species the names he gave them can only be retained in the synonymy with the addition »in Museo".

As far as I know of, *Lygosoma Meyeri* Doria does not occur in the islands of the Timor group but is restricted to Papuasias; as the Leyden Museum does not possess any specimen of this species I cannot compare it with specimens of the other two species, still Doria's description is so clear that there can be no doubt that it must be regarded as a distinct species, differing from *L. variegatum* a. o. by having only one loreal shield behind the nasal, instead of the two superposed loreals of the latter species. I think it better to call this species *L. Meyeri* Doria than to retain the old name of *L. melanopogon* D. B.

It is very curious that though *L. variegatum* is widely distributed over the islands of Papuasias (we have in our collections specimens from the Aroe islands, from Batante, Salawatti, Guebeh and Mefoor), and was in Müller's time rather common on Timor; still there is now not one specimen of this species in Dr. ten Kate's collection.

10. *Lygosoma smaragdinum* Less.

One young specimen from Rotti. The collections of the Leyden Museum contain three specimens of this species collected by Müller and Macklot in Timor.

11. *Lygosoma cyanurum* Less.

Three specimens from Groot-Bastaard.

Notes from the Leyden Museum, Vol. XVI.

12. *Lygosoma emigrans* nov. spec.

I class this species in the group *Hinulia* next to *Lygosoma tenue* Gray, to which species it shows a very striking resemblance as to the pholidosis of the head, but from which it widely differs with regard to the development of its limbs and its slenderness. Our new species is so slender and has such short limbs, that at first I hesitated whether to class it under the group *Hinulia* or under *Homolepida*, in which latter case it proved to be very nearly related to *Lygosoma taprobanense* Kelaart.

The following description in the way of Boulenger's Catalogue will show its affinity with *L. tenue*.

Habit slender, the distance between the end of the snout and the forelimb is contained about $1\frac{3}{4}$ in the distance between axilla and groin. Snout moderately obtuse. Lower eyelid scaly. Nostril pierced in a single nasal, no supranasal; frontonasal much broader than long, forming a suture with the rostral and with the frontal. Frontal as long or a little shorter than the frontoparietals and the interparietal together, in contact with the two anterior supraoculars, four supraoculars, seven or eight supraciliaries; frontoparietals and interparietal distinct, subequal or latter shortest; parietals forming a suture behind the interparietal, two enlarged shields on each side bordering the parietals, a smaller one in the middle behind the suture between the parietals. A part of the fourth upper labial and the fifth and sixth upper labial below the eye. Ear-opening round without auricular lobes, smaller than the eye-opening. 26 rows of smooth scales round the middle of the body, dorsal scales largest. A pair of large prae-anals. Length of the hind limb half as long as the distance between axilla and groin, length of the forelimb a little less than a third of that distance. Fourth toe the longest with 20 smooth subdigital lamellae.

On the back a brown colour with black spots, a dark brown band above the earopening through the eye mostly bordered above by a white line; sides dark brown spotted

Notes from the Leyden Museum, Vol. XVI.

with white; belly white, the upper and lower labials with dark brown and white spots.

Six specimens from the island of Soemba. Another specimen from Groot-Bastaard quite agrees with them only being of a darker and more uniform coloration.

Two specimens, captured by S. Müller at the island of Samao and now in our collections, do belong to this species. Though very much bleached through the action of the spirits, the dark line running over the tympanum and through the eye is still clearly visible.

Measurements on three specimens from Soemba.

	mm.	mm.	mm.
Total length	130	—	125
Head	10	11	10
Width of head	5,5	6,5	5,5
Body	48	43	40
Forelimb	9,5	10	10
Hindlimb	15	16	15
Tail	72	mutilated	75

Snakes.

13. *Typhlops braminus* Daud.

One specimen from Timor, another from Soemba.

14. *Elaphis subradiatus* Schl.

One specimen from Timor, another specimen and a head from Rotti. Both specimens with 23 rows of scales, all with 9 upperlabials, the fourth being a very small one lying beneath the lower praeocular, the fifth and sixth entering the orbit. The black line running along the sides of the neck to the posterior temporal shield is present in the Timor-specimen, but absent in both specimens from Rotti, both of them being of a uniform brown colour except the black line behind the eye.

15. *Cerberus rhynchops* Schn.

Several specimens from Rotti and Soemba.

16. *Dendrophis pictus* Boie.

One specimen from Timor, two from Rotti.

Notes from the Leyden Museum, Vol. XVI.

17. *Lycodon aulicum* Linné, var. γ Günther.

Specimens from Rotti and Soemba.

18. *Psammodynastes pulverulentus* Boie.

One specimen from Flores, another from Soemba.

19. *Bothrops erythrurus* Cantor.

One specimen from Timor, another from Rotti. As far as I know of *B. gramineus* Shaw, so often met with in collections from Sumatra, was never captured in the islands of the Timor-group.

Leyden Museum, March 1894.

NOTE VII.

REMARKS ON THE GENUS ORTHRAGORISCUS.

BY

Dr. C. L. REUVENS.

(Plate V)

Some time ago our Museum received a very young specimen (in liquor) of *Orthratoriscus*-spec.? This acquisition to the series of *O.*-specimens in the Leyden Museum gives me an opportunity to publish the observations I made in comparing this young animal with the other specimens in our collection.

The drawing (3 × natural size), joined to this publication, is made under my direction by Mr. Raar and is a most exact one.

The large conical spines, scattered over the body of the above mentioned young specimen, have the diameter (at the base) greater than the height, and the top sharp, the small ones, more numerous, have the same form but more obtuse. Günther (Catalogue Vol. VIII p. 318) says: »very »young examples with scattered spines, some of which are »permanent through life as osseous tubercles — for instance »at the throat.” After an examination of the mounted *Orthratoriscus*-specimens in our Museum, I made the following observations:

Coll. N ^o .	Place and date.	Tubercles on	
		snout.	throat.
2059	Ameland, 13/12 1889	0	0
2678	Japon, Coll. Bürger	0	0
2676	Cap, Coll. v. Horstock	1	0
2757	Callantsoog, Dr. Hoek, 5/12 1891	1	1
2677	Livourne, Coll. Cantraine	1	3
2679	Côte de Hollande	1	3

Notes from the Leyden Museum, Vol. XVI.

So we see that either there may be 1°. *O.*-species without any osseous tubercle permanent through life ¹⁾, 2°. *O.*-species with a tubercle only on the snout, 3°. *O.*-species with tubercles on snout and throat, or the tubercles are permanent or not without being a specific character.

Only a long series of specimens of the most different sizes, together with other characteristics, shall show whether the presence of tubercles is of specific-value or not. An other young specimen ²⁾, which Prof. Hubrecht was kind enough to sent me, measuring about 4 cM., shows the same number of osseous tubercles.

The "folded band" between dorsal-, caudal-and anal-fin and the body, to which Dr. v. L. de Jeude refers in "Notes from the Leyden Museum, Vol. XII, p. 191 and Vol. XIV, p. 128", is present in both young animals. I will mention here the great resemblance between Yarrel's figure in "British Fishes, 3^d Ed., Vol. II, p. 432" and that of *O. nasus* in "N. f. t. L. M., Vol. XIV, pl. 5" (made after a photo of the fresh animal), especially concerning the produced snout and the folds in the skin of the body. The band between fins and body is in Y's figure very distinct, in the photo we can only see a demarcation-line, the skin of the band having nearly the same consistence as that of the body, though folds parallel to the line exist. Yarrel says (Vol. II, p. 435): "the representation is from an adult fish, which was cast ashore at Scarborough and is preserved in the Museum there. It measured, from the point of the nose to the end of the caudal fin, three feet five inches (± 104 cM.)"; so this specimen has about the same size as our *O. nasus* from Callantsoog (123 cM.).

It seems to me that Y's drawing is an exact one ³⁾;

1) See also the drawing in "Yarrel, British Fishes, 3^d Ed. Vol. II, p. 436" after a young specimen (35½ cM.), and that in "Day, Brit. Fishes, pl. 148" after an adult one (± 154 cM.).

2) See also: "Notes f. t. L. Museum, Vol. XII, p. 194."

3) Yarrel says about this and another specimen: "the attachment of each fin was thick and fleshy."

his animal joins characteristics of the two groups mentioned in: »Notes f. t. L. Museum, Vol. XIV, p. 128" and »Tijdschrift der Ned. Dierk. Ver., 2^e Reeks, Vol. III, p. 190" in having a distinct folded band, folds in the skin of the body and a hump above the mouth. The two above mentioned young animals show no folds on the body.

Concerning the teeth of our young animal, I found that the maxilla superior is splitted up in the middle, the inferior is not cleft.

A skeleton (103 c.M.) in the collections of the Leyden Museum, preserved in spirits, has the following number of fin rays:

D. 19, C. 12, A. 18, P. 12.

Leyden Museum, March 1894.

NOTE VIII.

A NEW NOVACULA-SPEC. FROM THE BALABALONGAN
OR LITTLE PATERNOSTER ISLES

BY

Dr. C. L. REUVENS.

In a collection of fishes, in Jan. '94 presented to the Leyden Museum by the Lieutenant of arms J. v. Stockum, and collected in the Strait of Makassar, Balabalongan or Little Paternoster Isles, I found a species of the genus *Novacula* C. V., which, after examination, seems to me to be new for science. Dr. A. Günther, whom I asked to look for in the collections of the British Museum, confirmed me in my opinion and wrote me: »I have no doubt »your specimen of *Novacula* belongs to a species unknown to me”.

In honour of the collector I call this new species

Novacula Stockumii.

Diagnosis: D. $27\frac{1}{2}$, A. $3\frac{1}{2}$, P. 11, V. $\frac{1}{4}$.

Cheeks scaly; the two first dorsal spines are flexible, somewhat longer than the following, the interspace between the second and third spine greater than that between the remaining ones. The outer ventral ray produced; caudal rounded.

Colours (in spirits): body pale yellow-brown with a rosy tint; eye deep red; on the preoperculum and above the origine of the pectoral fin two short, somewhat faded bluish streaks; on the side of the body, partly covered by the pectoral fin a yellow (in live perhaps red) blotch; the basis of the dorsal fin yellowish, very narrow black

Notes from the Leyden Museum, Vol. XVI.

lines run from here, principally in the foremost part, along the outer margin of the scales to the lateral line; dorsal fin with oblique dark coloured lines, anal with oblique and transverse bluish —, caudal with remainders of dark coloured transverse ones. Especially distinctive is *a well defined black blotch between the two last dorsal rays.*

Length of the type-specimen 16.5 Cm.

Finally I will mention an indistinctly bordered black blotch on the left side of the body, a little above the anal fin, which is not to be found on the right.

According to this diagnosis *N. Stockumii* belongs to Günther's group E (see Catal. of Fishes, Vol. IV, p. 177):
»Cheek scaly; the two anterior dorsal spines form a more
»or less separate division”.

Leyden Museum, March 1894.

NOTE IX.

A NEW POTAMIDES

BY

M. M. SCHEPMAN.

Potamides (Terebralia) tenerrimus n. sp.

(Plate 6).

Shell pyramidal, slightly decollated, thin, fragile, moderately shining, blackish-brown, remaining whorls $6\frac{1}{2}$, inflated, with a deep suture; sculpture consisting of flat ridges separated by superficial grooves. Of these ridges there are 5 or 6 on the upper whorls and about 17 on the last whorl, where they reach to the base; the ridges are crossed by more or less distinct lines of growth, which produce here and there small granules, especially towards the upper part of the whorls; last whorl with a varix opposite to the margin of the aperture or slightly backwards.

Aperture ovate, outer margin expanded, thickened internally, sinuous and ascending above, produced in the middle, ending in an obtuse angle below; columella with a thin smooth callus, with an obtuse angle or fold below; canal extremely short, enclosing a rather deep sinus.

Operculum thin, light horn-colour, with an impressed central nucleus, surrounded by several laminae.

The measurements of the largest specimen are:

Alt. 19, diam. incl. perist. 11 mill.; Apert. alt., 8, lat. 6 mill.

var. *costata* mihi shell more elongate with numerous ribs.

Alt. 19, diam. incl. perist. $9\frac{1}{2}$ mill.

Notes from the Leyden Museum, Vol. XVI.

Locality: Roti.

This species has been collected by Dr. H. ten Kate. As the appearance is the same as that of *Cerithidea Tenkatei* and the fragility of the shell is not in accordance with its living in the sea, I suppose it may have been found in the same salt lake as the *Cerithidea*; moreover I received a specimen, larger but not adult and slightly broken, from that locality, for my private collection.

In a specimen which I have broken to examine the radula, I found nothing of the internal laminae characteristic for *Terebralia*; however every other character refers it to that subgenus.

The only species to which this one might be ascribed as a variety, is *P. sulcatus* Brug., but I fortunately have received also from Mr. ten Kate a specimen from the same locality, which belongs without doubt to that species; it is rather small and thin, also blackish brown, but in other respects agrees with the type, a. o. by the possession of the internal laminae, and the ribs are much less crowded as in the var. *costata* of *P. tenerrimus*.

Moreover I have been able to examine the radula, which differs in many respects, compared with the description and figures of Troschel (Gebiss der Schnecken).

The central tooth is not rounded but slightly emarginated at the top; the opaque spot, near the base, if present at all, is much less visible. However this may depend on the conception of the drawer; the cusps 3 in number are larger (some teeth have 5 cusps).

The lateral teeth have 4 instead of 3 cusps, the inner margin of the base is less notched, the outer margin has a small auricle, near the outer cusp. The first marginal tooth is not so broad as in *P. sulcatus*, it has also one denticle more, viz. 4 and has a small auricle at the external side. The second marginal tooth has 5 cusps instead of 3 in *P. sulcatus*, of these the external one is the largest, as in *P. sulcatus*; this tooth has, like in the last named species a large pellucid appendix on the external side, the margin

Notes from the Leyden Museum, Vol. XVI.

of which is however recurved at the top, which is not the case with *P. sulcatus*, according to Troschel. In other respects the two species agree in general appearance of the teeth.

Of my figures fig. 1 represents the central tooth, fig. 1^a, the same, seen more laterally; fig. 2, the lateral tooth in its natural position, fig. 2^a, the same turned slightly outwards; fig. 3, the inner marginal tooth, nearly in its natural position, 3^a, the same reversed, 3^b, the same expanded; fig. 4, the external marginal tooth, slightly reversed, 4^a, the same, still more reversed. The figures are magnified about 200 ×; the asterisks indicate the auricles. By the superposition of the teeth it is nearly impossible to observe them sufficiently in their natural position.

Rhoon, near Rotterdam, June 1894.

NOTE X.

ON THE HABITAT OF
NANINA INQUINATA V. D. BUSCH

BY

M. M. SCHEPMAN.

The habitat of *Nanina* (*Xesta*) *inquinata* seems still somewhat uncertain. Philippi who described the species for the first time (Abb. u. Besch. neuer oder wenig gekannter Conchylien I, pag. 10, pl. 4, Helix tab. I, fig. 4) gives Java as locality, on the authority of Mr. Winter; this is followed by Pfeiffer (Monogr. Heliceorum viv. I, pag. 46). The species was not found by Zollinger and has only been mentioned by Mousson (Mollusca von Java, pag. 16). Reeve (Conch. Ic. fig. 399) and even still Clessin (Nomenclator Heliceorum) give Java as locality, though not one of the rather numerous explorers of this isle, had afterwards collected this species.

Prof. von Martens (Ostas. Landschn., pag. 207) suggests, after seeing a young specimen in the collection of Mousson, that the habitat should be on the Banda isles, and by a new lot of shells, received from G. W. W. C. Baron van Hoëvell, this opinion proves to be the right one, in as much as the shell has been truly collected there. Amongst shells from several localities, I find a box from Banda-Neira containing nearly exclusively specimens, which belong without doubt to *Nanina inquinata*.

Moreover another box with shells, belonging principally to varieties or allied species of *Nanina citrina* from Werinama, on Ceram, district Amahei, contains also a number of specimens of *N. inquinata*. They agree all more or less with the figure of Philippi, which is called unsatisfactorily by Mousson, varying in the elevation of the spire, the colour, which is more brownish or yellowish and the number of spots. In a former Note (Vol. XIV, pag. 146) I mentioned a specimen from Timor. If this be really the same species, it would have a rather wide range of distribution, even if we neglect Java, which is probably erroneous.

I may still relate, that I have seen some time ago, a few specimens from one of the other Banda isles, in a private collection.

Rhoo n, July 1894.

Notes from the Leyden Museum, Vol. XVI.

NOTE XI.

DESCRIPTIONS OF EARTHWORMS

BY

Dr. R. HORST.

VIII.

ON A LARGE EARTHWORM FROM BORNEO.

Moniligaster coeruleus n. sp.

(Plate 7).

My colleague Mr. J. Büttikofer, at this moment making part of an expedition in West-Borneo, collected on the Goenong Kenepai a large earthworm, belonging to the family of the *Moniligastridae*.

Though our knowledge of the organisation of this interesting group much increased in the last years thanks to the careful investigations of Rosa, Beddard and Benham, there yet remain some points in their structure upon which further information is desirable; I will therefore not defer any longer to give a description of this new species, for which I propose the name of *Moniligaster coeruleus*.

The length of the single specimen is 380 mm.; on segment XIII it measures 15 mm. in diameter. The body consists of about 270 segments. When we except *M. Houtenii*¹⁾, which probably will prove to belong to an other genus, our worm is the largest *Moniligaster*-species hitherto

1) Zoolog. Ergebn. einer Reise in Niederl. Ost-Indien, Bd. II, 1892, p. 46. Notes Leyden Museum, Vol. IX, 1887, p. 97, Pl. I, figs. 1—3.

known, *M. Deshayesi* from Ceylon ¹⁾ and *M. indicus* ²⁾ from the Nilgiris being scarcely half as long, and most species do not measure more than 30 mm.

The colour of the worm at the dorsal side is bluish-brown, at its ventral side yellowish-brown. The brown colour is produced by a pigment, situated in the epidermis, and the blue one is not as usually due to the iridescence of the cuticula, but appears to belong to the circular muscle-layer, which possesses an ultramarine hue, especially in its outermost layers. No pigment could be detected in this layer, and the colour appears rather to be produced by the particular structure of the circular muscles. As also stated by Beddard in *M. bahamensis* ³⁾ the transverse muscular coat shows a honey-combed structure in longitudinal sections ⁴⁾, for in each muscle-fibre the external layer of fibrillated substance is very narrow as compared to the central body of granular matter; in this central body, which is clear and highly refractive the blue colour resides.

Like as in most other *Moniligaster*-species no clitellum is visible. The prostomium is rounded, not extending backward; its exact shape however could not be recognized, because the wall of the buccal cavity is everted. The buccal segment is very short, scarcely half as long as the second segment; it is provided with parallel, longitudinal folds.

The setae are arranged in couples; the distance between the two ventral couples is twice as great as the space between the ventral and dorsal ones. Upon the two anterior segments the setae could not be recognized. The

1) Nouv. Arch. du Museum, Vol. VIII, 1872, p. 130, Pl. IV, figs. 77—84.

2) Quart. Journ. Microsc. Science, Vol. XXXIV, 1893, p. 361, Pls. XXXII and XXXIII.

3) Proceed. Zool. Soc. 1892, p. 690.

4) No doubt by a slip of the pen the figure 5 of Plate XLV is called in the explanation a transverse section through the clitellum; it really represents a longitudinal one.

setae (fig. 1) have the usual shape, though they are but slightly curved; they measure 1 mm. in length. The free extremity of each seta is furnished with crenulated, arched markings like in several Geoscolecidae. *Moniligaster Houtenii* has also its setae ornamented, though on a somewhat different manner; moreover they are straighter and smaller.

As to the genital pores only those of the spermathecae and those of the male genital ducts have the position normal for the genus (fig. 5). The spermathecal pores, situated in the intersegmental groove VII/VIII, in the series of the dorsal bristles, are very obvious, button-hole-shaped; the male pores however are very narrow slits in the intersegmental groove X/XI, corresponding to the interval between the ventral and dorsal setae. The oviducal pores are two small but distinct slits upon segment XIII, in front of the ventral bristles. In this point our specimen does not agree with the other *Moniligaster*-species, which have the oviducal pores situated in the intersegmental groove XI/XII, and therefore separated from the male pores only by a single segment; nevertheless there cannot be a mistake, for in the dissected worm I could distinctly recognize the oviduct on its course to the external opening. The nephridial pores were not visible externally, still on examining the internal structure, I could state, that the nephridia open themselves on the exterior in line with the ventral setae, and not with the dorsal ones, as in *Moniligaster indicus*.

As first stated by myself in *Monilig. Houtenii*, so also in the present species the internal segmentation does not correspond to the external one, due to the shifting of several septa. Benham observed the same feature in *Moniligaster indicus*, and according to Rosa it occurs also in *Desmogaster*¹⁾. The shifting commences with the ninth septum, that instead of being inserted in the intersegmental groove IX/X is attached to the body-wall about in the middle of

1) Ann. Mus. Civ. Stor. Nat. Genova, 2e S. Vol. IX, 1890, p. 368, Pl. XII.

segment X; the next following septum is nearly thrown back a whole segment and is inserted close to the hinder boundary of segment XI. In other *Moniligaster*-species the tenth and eleventh septum meet with each other and are confluent along a part of their surface; in the enclosed space the ovaria and the oviducal-funnel are situated. *Monilig. coeruleus* however shows a different feature, for the eleventh septum is absent, or it is shifted to the middle of segment XIII and there connected with the twelfth septum, the ovaria being enclosed in the intervening space. As no nephidium occurs in the stretch between both septa, I believe it may not be considered to correspond to a somite. The septa of the succeeding segments are all inserted in the body-wall slightly in front of the inter-segmental groove.

The septa V/VI, VI/VII, VII/VIII and VIII/IX are thick and muscular like in other *Moniligaster*-species; moreover the six septa behind the gizzard, XIX/XX—XXIV/XXV show the same feature. This is also the case in *M. Houtenii*, but I did not find it mentioned for one of the other species.

The intestinal canal as usually is characterized by the presence of several gizzards; already in segment XIII the wall of the gut presents a muscular appearance, though its anterior bounding is not sharply marked and a transition between the oesophagus and the gizzard seems to occur as in *Monilig. indicus*. The gizzard extends till segment XIX and shows five compartments, separated from each other by an annular fibrous band. Behind the gizzard, in the region of the posterior thickened septa, the intestine becomes narrow and cylindrical; in segment XXV it commences to enlarge, but is very deeply constricted in the five following segments by the corresponding septa. The lateral coeca, thus formed, are highly vascular and are provided with a great number of parallel blood-vessels by a branch of the dorsal trunc, which soon after its origin divides itself fan-like in numerous smaller vessels.

Notes from the Leyden Museum, Vol. XVI.

In *Monilig. japonicus* ¹⁾ Michaelsen believes to have found concretions of carbonate of lime in those dilatations of the intestine. The real sacculated intestine commences about segment XXX.

The dorsal vessel is single; commissural vessels are present in segments IV—X. Only those in segments VIII, IX and X are highly dilated.

The *nephridia* of our worm (fig. 2), like in other *Moniligaster*-species, resemble those of *Monilig. Houtenii*; they also possess a long, wide, muscular diverticulum, but the excretory duct is shorter and not so slender. Where the diverticulum passes into the excretory duct, the nephridial tube is constricted and connected with the glandular part of the organ, which shows a large loop, of which the limbs are spirally wound around each other. The nephridia appear to commence in segment III, for in front of the fourth septum I observed two pairs of them; they do not occur however in all the following segments, for they are absent in segment IX and X, in the space between the shifted septa IX/X and X/XI and also in segment XIII and XIV.

A pair of large spermathecae are situated in segment VIII along the sides of the oesophagus; each spermatheca (fig. 3, *sp.*) consists of a pear-shaped sac, which opens on to the exterior by a long and delicate, sinuous duct. In *Monilig. indicus* ²⁾ the duct appears not to open directly on the exterior, but first to pass into a bilobed sac, with thick muscular coat, which Benham believes to correspond to both the pyramidal organs of *Monilig. Deshayesi*, described by Perrier.

On opening the worm, the *male generative* organs directly strike the attention by their enormous dimensions; they consist of a pair of vesiculae seminales and a pair of prostata-glands, which occupy a large part of the coelomic cavity of segments X, XI and XII. The two seminal vesicles are entirely independent of one another, each of them

1) Archiv f. Naturgesch., 1892, p. 24.

2) loc. cit., figs. 3 and 5.

enclosed in a pouch-like protrusion of the septum IX/X. The funnel is inserted to the innerside of the front-wall of the sac and passes into a delicate, greatly convoluted spermduct, situated along the front-side of the ninth septum and accompanied in its course by a bloodvessel; arrived near the ventral body-wall it traverses the septum, passes backward till into segment XI and opens into the prostata. The *prostata* is an orange-coloured, plain, tubular organ, consisting of two limbs, which form an U-shaped loop and the former of which opens externally into the intersegmental groove X/XI. Its surface is faintly rugose, divided in small polygonal fields, which correspond to the groups of glandular cells, of which the wall of the prostate is composed, and which with their convex base project somewhat above the surface of this organ. In most *Moniligaster*-species the prostata appears to present a more compressed, pyriform shape and to be specialized in two regions, a distal muscular one, the atrium, and a proximal more glandular part, the prostata. Only in *Monilig. Deshayesi* and *M. Houteni* it appears to have a more elongated, tubular appearance. Though my material did not permit an investigation of the finer histology of the prostata, on a transverse section, made with the razor, its structure could distinctly be recognized.

This perfectly agrees with the structure of the prostata of *Monilig. indicus*, as described and figured by Benham, Pl. XXXIII, fig. 9, only the muscular layer lies nearer to the epithelium, that surrounds the lumen, like as in *Monilig. Barwelli*¹⁾. The fascicles of long, narrow ducts of the club-shaped gland-cells, could not only easily be distinguished, but I observed, that those ducts were closely brought together in the muscular coat, and after having traversed this layer again diverged, probably to make place for the epithelial cells, lying between their necks. I found the epithelial layer lined by a distinct cuticula. In the pro-

1) Quart. Journ. Micr. Science, Vol. XXIX, Pl. XII, figs. 10—12.

stata of *Desmogaster* the muscular coat appears to be more developed as in *Moniligaster*.

The ovary is extremely large; in the space between the two confluent septa in segment XIII, it is attached to the anterior of both, extending like a fringed band from the dorsal to the ventral side. It consists of numerous lobes, showing a somewhat conical shape and each furnished with a couple of blood-vessels united in a loop (fig. 4). The anterior side of the opposite septum bears ventrally the folded oviducal funnel, dorsally the slit-like opening of the receptaculum ovarum; both are situated on a distance from each other, but are connected by a folded ridge, which I suppose is coated with cilia, along which the ova are transported from the receptaculum to the funnel. The short oviduct traverses the septum and opens into the porus situated in line with seta 2. The receptaculum ovarum is rather great, though not so large as in some other *Moniligaster*-species, in which it extends over several segments; it has the shape of a cap and only occupies one segment. According to the description of Rosa and Benham the ovaries of *Monilig. Beddardi* and *M. indicus* have a cylindrical, spirally coiled shape, and that of *M. japonicus* is described by Michaelsen as »ein hoher büschelig oder zottiger Besatz"; none of those authors however speaks of the particular division in lobes and the loops of bloodvessels penetrating in them.

In an interesting paper, dealing with the anatomy of *Monilig. indicus*, Benham recently summarized the characters, by which the genus *Moniligaster* is distinguished. Among the ten characters enumerated by this author there are two, as above referred to, which our species does not possess; viz. the oviducal pores, instead of in the inter-segmental groove XI/XII, occur upon segment XIII, and the nephridial pores are not situated in line with the dorsal, but with the ventral setae. Though this different position of the oviducal pores no doubt presents a remarkable divergence, I hesitated to base a new genus on

Notes from the Leyden Museum, Vol. XVI.

this feature, because our specimen presents the main characters, by which the genus *Moniligaster* is characterized, viz. a single pair of spermathecae, with a long, narrow duct opening in the intersegmental groove VII/VIII; a single pair of sperm-sacs, with sperm-ducts terminating in a prostata, which opens between segments X and XI, and a moniliform gizzard. As stated in a preceding paper, I found that in *Monilig. Houtenii* the oviducal pores neither have the position indicated for the other species of this genus, but are situated upon segment XIV. It appears to me probable that the position of the oviducal pores, which nearly in all other earthworms is constant on segment XIV, is liable to some variation in the family of the Moniligastridae. Therefore I thought it preferable to range this Borneo-worm in the genus *Moniligaster*, and to await whether the discovery of a new species perhaps might throw light on this questionable point of their structure.

July 1894.

EXPLANATION OF PLATE 7.

Fig. 1. *Moniligaster coeruleus* Horst. One of the setae. $\times 40$ diam.;

1a. Distal extremity of a seta, highly magnified.

Fig. 2. A nephridium. $\times 5$ diam.

Fig. 3. View of the right half of thirteen segments (VII—XIX) of the dissected worm, to illustrate the arrangement of the genital organs. $\times 2\frac{1}{2}$ diam.

g. gizzards; *o.* ovary; *ov.* oviduct; *pr.* prostata; *ro.* receptaculum ovarum; *s.* vesicula seminalis; *sd.* spermduct; *sp.* spermatheca.

Fig. 4. A portion of the ovary; highly magnified.

Fig. 5. Ventral view of the body-wall of eight segments (VII—XIV), cut through along the dorsal line and spread out: *np.* nephridiopore; *sp.* spermathecal pore; ♂. male pore; ♀. oviducal pore.

Notes from the Leyden Museum, Vol. XVI.

NOTE XII.

FRESH AND BRACKISH WATER FISHES FROM
SUMBA, FLORES, GROOT-BASTAARD,
TIMOR, SAMAOE AND ROTTI.

BY

Dr. C. L. REUVENS.

Among the zoological collections, made by Dr. H. ten Kate during his travels in the Malay Archipelago, which are now preserved in the Leyden Museum, are many fishes caught in fresh and brackish water. As it is a rare fact to become fishes from the above mentioned islands, I venture to give an enumeration of the different species; so this list will especially be a contribution to the knowledge of the geographical distribution of fishes in the East Indian Archipelago.

The total number of fishes collected is 133, that of the species 15.

A. Fishes from Sumba.**a. NEIGHBOURHOOD OF MELOLO.****1. *Ambassis Commersonii* C. V.**

Günther, Cat. of Fishes, T. I, p. 223.

Bleeker, Atlas Ichthyologique, T. VIII, p. 136, tab. 352, fig. 1.

Day, Fishes of India, p. 52, pl. 15, fig. 3.

Nº. 5091¹⁾. 1 Ex. Length 65 mm.

1) This and the following numbers indicate the bottles in the collection.

Coloration: yellow with a purple resplendence; a bright silvery band from the orbit to the centre of the caudal fin. Opercle silvery, eye with a black spot at the upper edge. Interspace between the second and third dorsal spine blackish.

Sub N^o. 5140 are preserved the 8 ex., mentioned by Dr. Bleeker in his *Atlas Ichthyologique*; yet these specimens are much faded.

It may be observed here, that, after Bleeker's death, the Leyden Museum bought in 1879 the whole collection, made by this eminent ichthyologist for his own study. Together with the fishes, he formerly sent to the Leyden Museum, these collections were the base for all his ichthyological treatises, especially for his '*Atlas Ichthyologique des Indes Orientales Néerlandaises*'. So it is obvious, that all the specimens from Bleeker's collections, representing species founded by him, are typical ones.

2. *Anabas scandens* (Dald.).

Günther, *Cat. of Fishes*, T. III, p. 375.

Bleeker, *Atlas Ichthyologique*, T. IX, tab. 395, fig. 2; tab. 396, figs. 2 and 3.

Day, *Fishes of India*, p. 370, pl. 78, fig. 3.

N^o. 5153. 6 Ex. Length 65–90 mM.

Except these and the afterwards enumerated 63 ex. from the collections of ten Kate, the Leyden Museum possesses a series of 115 ex. of *A. scandens* (length 32–185 mM.). The number of scales in the lat. l. is in all these 30, sometimes 31, never less. Concerning the form of the body, there is some variation in the proportion between the height of the body and the total length. In intact examples I found the total length varying between the limits 4.3 and 3.06 \times greatest height.

I agree with Bleeker, when he says (*Mém. sur les poissons à pharyngiens labyrinthiformes*, p. 9, *Nat. Verh. Kon. Ak. Amst.*, T. XIX) that the black dot on the base of the caudal fin, and the black transverse streaks on the

Notes from the Leyden Museum, Vol. XVI.

body form no specific characters, as they are present in all stadia of distinctness.

Concerning Bleeker's *A. microcephalus*, the type of which is preserved in our Museum sub N^o. 5161, I must mention, that the proportion, between the length of the head and the total length, is so little different from that in ex. of *A. scandens* of the same dimension, that I place *A. microcephalus* to the synonymy of *A. scandens*. Bleeker already founded his species with reservation.

If, to distinct the species of *Anabas*, we take as principal specific characters 1^o. the number of scales on the lat. l. and 2^o. the proportion between the greatest height and the total length of the body, I must mention here an *Anabas*-specimen, found by me in a bottle with 93 ex. of *A. scandens* from the Malay Archipelago, and quite different so from *A. scandens* as from *A. oligolepis* Blkr. I propose to establish on this ex. a new species:

Anabas elongatus, n. sp.

N^o. 5162. 1 Ex. Length 104 mM.

Specific characters: scales on the lat. l. 30; greatest height of the body one fifth of the total length and situated in a vertical level drawn through the upper edge of the gill-openings; from here to the cauda the body becomes gradually more slender. Width of head 19 mM., height 20 mM. Diameter of eye 7.5 mM. Whilst the spines at the lower edge of the praeoperculum are very distinct, they want from here to the middle, where they are present again. No characteristic colours or any streaks or dots, but it must be mentioned, that our specimen was at least 20 years preserved in spirits.

Hab. Malay Archipelago.

When in more than 170 ex. of *A. scandens* the total length never surpasses $4.3 \times$ the greatest height of the body, it is in *A. elongatus* $5 \times$ g. h.

When in *A. scandens* the greatest height of the head is

Notes from the Leyden Museum, Vol. XVI.

considerably greater than the width, it is in *A. elongatus* nearly the same.

When in *A. scandens* the greatest height of the body is situated in a vertical level drawn through the anal-opening, it is in *A. elongatus* situated just behind the head.

The diameter of the eye is much greater than that in ex. of *A. scandens* of the same and even of greater size.

A third known East Indian species of *Anabas*, *A. oligolepis* Blkr., is characterized by a smaller number of scales on the lat. l., namely 27. Of this species the Leyd. Mus. possesses:

- | | |
|-------------------------------|-----------------------|
| Nº. 5160. 9 Ex. Bandjermasin. | Coll. Bleeker. Types. |
| Nº. 1582. 1 Ex. Borneo. | Coll. Schwaner. |
| Nº. 1588. 1 Ex. Bengal. | Coll. Frank, 1840. |

3. *Hippocampus guttulatus* Cuv.

Günther, Cat. of Fishes, T. VIII, p. 202.

Day, Fishes of India, p. 682, pl. 174, fig. 6.

Nº. 5163. 2 Ex.

Coloration: light brown, marbled with darker on the back; all parts with numerous small black and white dots.

The following ex. are to be found in the Leyd. Mus.

- Nº. 3916. 4 Ex. Cap. Coll. v. Horstock.
- Nº. 3917. 3 Ex. Adriatic sea. Coll. Feldegg. Very distinct white spots (as in the *Scopelinae* see Kner, Novara-Reise, Pisces, p. 391) and filaments on the head.
- Nº. 3918. 3 Ex. Anc. Cabinet.
- Nº. 3919. 4 Ex. Adriatic sea. Coll. Michahelles.
- Nº. 3920. 4 Ex. Sumatra. Coll. S. Müller.
- Nº. 3922. 1 Ex. Timor. Coll. S. Müller.
- Nº. 5165. 5 Ex. Sea of Amboina. Coll. Bleeker. Types of *H. melanospiros* Blkr.
- Nº. 5166. 3 Ex. East coast of Flores. Coll. Bleeker. Types of *H. polytaenia* Blkr.
- Nº. 5167. 33 Ex. East Indian Archipelago. Coll. Bleeker. Incl. the types of *H. kuda* Blkr.

Notes from the Leyden Museum, Vol. XVI.

b. RIVERS BETWEEN MENGILI AND WASANG.

4. *Dules rupestris* (Lacép.).

Günther, Cat. of Fishes, T. I, p. 268, nec *maculatus* C. V.

Bleeker, Atlas Ichthyologique, T. VII, p. 121, tab. 339, fig. 2.

Nº. 5169. 5 Ex. Length 51—132 mM.

The black dots on the centre of the scales and those on the lower and upper part of the caudal fin are very distinct.

Except these are to be found in the Leyden collections:

Nº. 326. 1 Ex. Java. Coll. Kuhl and v. Hasselt.

Nº. 4419. 1 Ex. Madagascar. Coll. Pollen and v. Dam.

Nº. 5168. 6 Ex. Timor and Amboina. Coll. Bleeker.

5. *Dules marginatus* C. V.

Günther, Cat. of Fishes, T. I. p. 268.

Bleeker, Atlas Ichthyologique, T. VII, p. 120, tab. 316, fig. 1,

nec *Perca ciliata* K. et v. H. nec *Percichthys ciliata* Günther
nec *Kuhlia ciliata* Gill.

Day, Fishes of India, p. 67, pl. 18, fig. 1.

Nº. 5170. 1 Ex. Length 117 mM.

Day, in describing this species, gives the following remark: »*Perca ciliata* (K. et v. H.) C. V. = *Percichthys ciliata* (C. V). Günther = this species according to Bleeker."

Bleeker, in his treatise »Sur le genre *Moronopsis* Gill »(*Paradules* Blkr.) et les espèces Indo-Archipélagiques, »Arch. Néerl. d. Sc. Ex. et Nat., T. VII," as well as in his Atlas Ichthyologique, considers *Perca ciliata* (K. et v. H.) C. V. synonymous with *Dules marginatus* C. V.

Sub Nº. 328 is preserved in our collection the type of *D. marginatus* C. V., collected by Kuhl and v. Hasselt in Java. The specimen is long 122 mM., according with the »4½ pouces" of Cuvier et Valenciennes. With this ex. the following specimens, together with the above mentioned Nº. 5170, correspond:

Nº. 327. 1 Ex. Borneo. Coll. S. Müller.

Notes from the Leyden Museum, Vol. XVI.

Nº. 5065. 1 Ex. Waai-Soena, Boeræ. Coll. Hoedt, 1864.

Nº. 5066. 1 Ex. Amboina. Coll. Teysmann, 1877.

Nº. 5171. 35 Ex. Indian Archipelago. Coll. Bleeker.

The fish (Nº. 1029, Java, Coll. Kuhl and v. Hasselt), taken by Bleeker for *Perca ciliata* (K. et v. H.) C. V., and confirmed by his own handwriting »*Paradules*'' on the label of the bottle, is no *Dules* and does not accord with the measurement given by of C. and V. Therefore I can not adhere to Bleeker's opinion, when he considers *P. ciliata* syn. with *D. marginatus*.

Gill nor Günther having seen the type of Kuhl and v. Hasselt, their determination shall remain undecided.

Characters of the specimen Nº. 1029 are: D. 11—11, A. 3—8. Distinct canines. Last dorsal spine shorter than the forelast spine and the first soft ray. No scales on the base of the dorsal fin as in *Dules*. Operculum with two points, praeoperculum serrated, praeorbital smooth. Branchiostegals 7. The ex. is very faded, but I suppose it had a uniform coloration without streaks or dots on body or fins.

6. *Gobius giuris* Ham. Buch.

Günther, Cat. of Fishes, T. III, p. 21 (p. 45, *G. spectabilis*?).

Day, Fishes of India, p. 294, pl. 66, fig. 1.

Nº. 5172. 1 Ex. Length 96 mM.

Nº. 5173. 1 Ex. Length 280 mM.

I am in doubt whether Günther's *G. spectabilis* is synonymous with *G. giuris* H. B., as is the conclusion of Day. The principal character, given by Günther for his species, is the great length of the caudal fin ($\frac{1}{4}$ of the total), whilst he says: »Dorsal fins higher than the body, the »spines of the first are produced into filaments''.

Ex. Nº. 5172 has a total length of 96 mM., caudal fin 20 mM., 2^d highest dorsal ray equals the height of the body.

Ex. Nº. 5173 has a total length of 280 mM., caudal fin 70 mM., 2^d highest dorsal ray, with long filament, 50 mM., height of the body 38 mM.

Notes from the Leyden Museum, Vol. XVI.

So we see there is a great difference in the proportion of these measurements in one and the other. In both animals the upper half of the body is dark, the lower half light brown, along the sides 5 black dots and 2 or 3 on the back; the vertical fins are dotted.

Sub N^o. 5174 we possess 63 ex. from the East Indian Archipelago, determined by Bleeker as *G. celebicus* C. V. (after Day, p. 289, *G. celebicus* syn. with *G. biocellatus* C. V., but after Günther it is syn. with *G. giuris*, which is also my opinion). One of them, A, with a total length of 118 mM., has the caudal fin 29 mM., the 2^d highest dorsal ray, with short filament, 15½ mM. and the height of the body 16 mM.

Bottle N^o. 5175 contains 25 ex. from the East Indian Archipelago, determined by Bleeker as *G. giuris* C. V. Among them I found a specimen, B, with the following measurements: total length 117 mM., caudal fin 29 mM., 2^d highest dorsal ray, with long filament, 22 mM., height of the body 14 mM.

The width of the interorbital space in A is 5 mM., in B 2½ mM., that of the head in A 18 mM., in B 13 mM. The enlarged teeth in both jaws are in B greater than in A.

Bottle N^o. 5176 contains 45 ex., also from East Indian waters and determined by Bleeker as *G. catebus* C. V. The following are some measurements of large specimens:

Tot. length.	Caud fin.	2d highest dors. ray w. long fil.	Height of the body.	Interorbi- tal space.
C. 310 mM.	73 mM.	62 mM.	35 mM.	12 mM.
D. 260 "	62 "	49 "	37 "	9 "
E. 256 "	60 "	broken off.	34 "	8.5 "
F 240 "	55 "	30 mM. (short filament)	29 "	8 "

Except the here enumerated 135 ex. are still to be found in our collections:

N^o. 1871. 1 Ex. Java. Coll. Kuhl and v. Hasselt.

N^o. 1892. 1 Ex. Macassar. Coll. Piller, 1849.

N^o. 1893. 1 Ex. Borneo. Coll. Schwaner, 1846.

Notes from the Leyden Museum, Vol. XVI.

Nº. 2053. 2 Ex. Borneo. Coll. Schwaner, 1846.

Nº. 3941. 4 Ex. Madagascar. Coll. Pollen and v. Dam.

As I mean, that the last word in this question is not yet spoken, I have given this abridgement of the enorm material (a total of 143 ex.) in the Leyden Museum and the few remarks on some individuals, in the firm expectation, that the ichthyologist, who in future will make the so desired, more elaborated monograph of the *Gobiidae*, than that of Bleeker (Arch. Néerl. 1874, T. IX, p. 289), shall use in the first place the Leyden collections.

I agree with Günther (T. III, p. 23) that *G. unicolor* K. et v. H. is a distinct species; the type-specimen is preserved in the L. M. sub Nº. 1819.

7. *Eleotris aporos* Blkr.

Günther, Cat. of Fishes, T. III, p. 109.

Nº. 5177. 1 Ex. Length 155 mM.

The type-specimens of this species, founded by Bleeker (see Nat. Tijds. Ned. Ind., T. VI, p. 59), are preserved sub Nº. 5178, 6 ex. Sindangole, Halmaheira.

8. *Eleotris Hoedtii* Blkr.

Günther, Cat. of Fishes, T. III, p. 110.

Nº. 5179. 2 Ex. Length 138 and 157 mM.

Sub Nº. 5180 are preserved 17 ex. from East Indian waters, Coll. Bleeker; among them the type of the species, from Amboina, long 161 mM. (see Nat. Tijds. Ned. Ind., T. VI, p. 496).

After Bleeker (Versl. Kon. Ak. Wet. Amst. 1877. 2^{de} Reeks, T. XI, p. 27) *E. aporos* and *E. Hoedtii* belong to the genus *Ophiocara* Gill (Proc. Ac. nat. Sc. Philad., 1863, p. 270), as well as *E. ophiocephalus* K. et v. H. (type sub Nº. 2052) and *E. porocephala* C. V.

Notes from the Leyden Museum, Vol. XVI.

9. *Eleotris fusca* (Bl. Schn.).

Günther, Cat. of Fishes, T. III, p. 125.

Day, Fishes of India, p. 313, pl. 65, fig. 7.

Nº. 5181. 5 Ex. Length 75—125 mM.

In the Leyden collections are moreover preserved:

Nº. 2049. 1 Ex. Andamans. Coll. Day, 1876.

Nº. 2050. 1 Ex. Calcutta. Coll. Day, 1876.

Nº. 3949. 2 Ex. Madagascar, Samberano-riv. Coll. Pollen and v. Dam.

Nº. 5182. 50 Ex. (Length 35—137 mM.). East Indian waters. Coll. Bleeker.

B. Fishes from Flores.**a. MAUMERI (EAST-FLORES).**1. *Eleotris fusca* (Bl. Schn.).

Nº. 5183. 1 Ex. Length 50 mM.

b. LARANTOEKA (EAST-FLORES).2. *Ophichthys colubrinus* (Bodd.).

Günther, Cat. of Fishes, T. VIII, p. 81.

Bleeker, Atlas Ichthyologique, T. IV, p. 61, tab. 165, fig. 1.

Day, Fishes of India, p. 665, pl. 168, fig. 4.

Nº. 5184. 1 Ex. Length 323 mM.

Coloration: 24 brown rings, alternating with narrower, white, at the upper half brownish ones. Snout white. On the 3, 4, 5, 13, 14, 15, 16, 17, 18, 19, 22, 23 and 24 brown ring a white dot at the dorsal side.

Besides this specimen, in the Leyden collections are preserved:

Nº. 3703. 1 Ex. juv. Moluccas. Coll. Forsten, 1844.

Nº. 3704. 1 Ex. Timor. Coll. S. Müller.

Nº. 3767. 1 Ex. Timor. Coll. S. Müller.

Notes from the Leyden Museum, Vol. XVI.

- Nº. 3839. 1 Ex. Ternate. Coll. Bernstein, 1861.
 Nº. 4389. 1 Ex. Nossi-Bé (Island N.W. of Madagascar).
 Coll. Pollen and v. Dam.
 Nº. 5047. 1 Ex. Wahaay (N. E. coast of Ceram). Coll.
 Moens, 1862.
 Nº. 5185. 5 Ex. East-Indian waters. Coll. Bleeker.

C. Fishes from Groot-Bastaard.

1. *Eleotris fusca* (Bl. Schn.).

- Nº. 5186. 18 Ex. juv. Length 35—65 mM.

2. *Anguilla bengalensis* (Gray).

Günther, Cat. of Fishes, T. VIII, p. 27.
 Bleeker, Atlas Ichthyologique, T. IV, p. 9, tab. 145, fig. 2.
 Day, Fishes of India, p. 659, pl. 168, fig. 1.

- Nº. 5187. 10 Ex. juv. Length 45—77 mM.

In the collections of the Museum are preserved:

- Nº. 3664. 1 Ex. Macassar. Coll. Piller.
 Nº. 3740. 1 Ex. Java. Coll. Kuhl and v. Hasselt.
 Nº. 5188. 9 Ex. and 1 skin. East-Indian waters. Coll.
 Bleeker. (Length of skin, without head, 870 mM.).

D. Fishes from Timor.

a. NEAR AMARASSI.

1. *Anabas scandens* (Dald.).

- Nº. 5189. 46 Ex. Length 43—140 mM.

b. LAKE NEFKO NEAR OIKABITI.

2. *Anguilla bengalensis* (Gray).

- Nº. 5190. 2 Ex. Length 385 and 625 mM.

c. LAKE NEAR BAUN.

2. *Anguilla bengalensis* (Gray).

- Nº. 5191. 1 Ex. Length 200 mM.

Notes from the Leyden Museum, Vol. XVI.

E. Fishes from Samaoe.**1. *Salarias edentulus* (Bl. Schn.).**

Günther, Cat. of Fishes, T. III, p. 252.

Nº. 5192. 2 Ex. Length 53 and 78 mM. Caught in brackish water.

Sub Nº. 4790 are preserved 7 ex. from the Malay Archipelago, coll. Bleeker.

2. *Salarias Oortii*. Blkr.

Günther, Cat. of Fishes, T. III, p. 257.

Nº. 5193. 4 Ex. Length 30, 34, 47 and 56 mM.

The first description, given by Bleeker (Nat. Tijds. Ned. Ind., 1851, T. I, p. 257) is made after a sketch, left by Kuhl and v. Hasselt. The second description (Acta Soc. Sc. Ind. Neerl., 1857—58, T. III, 6^{de} Bijdrage tot de vischfauna van Sumatra, p. 39) is taken after 7 ex. from Trussan, w. c. of Sumatra. These types are, with 9 other ones, preserved in the Leyd. Mus. sub Nº. 4791.

F. Fishes from Rottl.**a. LAKE DANAU-NALUK.****1. *Ambassis Commersonii* C. V.**

Nº. 5194. 1 Ex. Length 87 mM.

2. *Eleotris fusca* (Bl. Schn.).

Nº. 5195. 2 Ex. Length 46 mM. each.

3. *Amblyopus* spec.?

Nº. 5196. 1 Ex. very young and in bad condition. Length 74 mM.

Notes from the Leyden Museum, Vol. XVI.

4. *Anabas scandens* (Dald.).

Nº. 5197. 14 Ex. Length 52—110 mM.

5. *Anguilla bengalensis* Gray.

Nº. 5198. 4 Ex. Length 295, 405, 410 and 430 mM.

b. NEAR BAĀ.

6. *Echeneis lineata* Menz.

Günther, Cat. of Fishes, T. II, p. 382.

Poey, Memorias sobre la Historia [nat.] de Cuba. T. II, pp. 254 and 255.

Lutkén, Vid. Meddel. fra de naturh. Forening Kjøbenhavn, 1875, p. 36.

Nº. 5199. 1 Ex. Length 385 mM.

11 Laminae on the disk. Maxilla inferior produced. Pectoral, anal and dorsal with white margins. The middle rays of the caudal fin longest, the outer somewhat produced. Upper half of the body bluish black, lower half white; on the left side some remainders of a white streak from the base of the pectoral fin to the cauda.

Sub Nº. 3647 is preserved another ex., from the North sea, with 10 laminae. Coloration the same as in Nº. 5199, though faded. The outer caudal rays much produced. Total length 550 mM.

Before finishing this enumeration, I must return many thanks to Prof. Max Weber at Amsterdam for his kindness in determining some of the species.

Leyden, July 1894.

NOTE XII.

TWO NEW SPECIES
OF EXOTIC LONGICORN BEETLES

DESCRIBED BY

C. RITSEMA Cz.

Erythrus Rothschildi, n. sp.

Length 30 millim.; breadth at the shoulders 7 millim. — Above dull red, the mandibles and the vertex of the head as well as the antennae black; the anterior half of the pronotum provided with two elongate slightly curved and divergent black spots which bear on their posterior end a nipple-shaped tubercle; between these tubercles and the base of the pronotum, but somewhat more outwardly, a slightly raised punctiform black dot is present; the scutellum is covered with red and with black hairs. — Body beneath dull black, the extreme hinder margin of the four basal ventral segments very shining; the legs subnitid, black, the anterior and intermediate coxae red; moreover a band across the base of the prosternum and its front margin, as well as the throat, red.

Elongate, rather broad, the elytra nearly parallel. The head small, prolonged anteriorly, the interantennary ridge, which is divided by a deeply impressed line, is separated from the clypeus by a narrow curved groove; the antennae are short, having a length of not quite two thirds of that of the elytra; the scape, which is densely punctured, is about equal in length to the 2nd and 3rd joint taken

Notes from the Leyden Museum, Vol. XVI.

together, the 4th joint is the shortest of all, except the 2nd, the 5th distinctly longer, the 6th somewhat longer than the 5th, the following ones subequal in length to the 6th; joints 5 to 10 dilated on their outer side and serrated, the 11th appendiculate and distinctly longer than the 10th.

The prothorax strongly narrowing in curved lines towards the front margin which is straight, turned upwards, and preceded by a narrow furrow; the base is constricted and faintly bisinuate; in front of the middle of the base, between and immediately behind the nipple-shaped tubercles, the disk is distinctly raised, the top of the elevation nitid, sparsely punctured; the pronotum is covered with indistinct curved wrinkles or scratches. The scutellum is broadly heart-shaped.

The elytra are strongly rounded at the shoulders, broadly rounded posteriorly and strongly spined at the suture; the sides are straight and nearly parallel; the elytra are densely punctured throughout and each of them shows two very distinct parallel costae, one along the middle, the other midway between this and the suture; these costae join the suture separately at some distance from the apex; on the outer half two almost inconspicuous costae are present which are evanescent anteriorly and posteriorly.

The under surface of the head and the prosternum are transversely wrinkled, and the metasternum shows an impressed line along the middle; the abdomen is broad, parallel-sided, and suddenly truncate at the apex; the apical margin densely fringed with black hairs. The legs are short, the tibiae of the middle- and hind legs shorter than the femora; they are finely and densely punctured, and the under side of the femora is separated from the sides by a raised smooth line; the under side of the anterior femora is covered with a grey, that of the intermediate and posterior femora with a black pubescence.

One female example from Sukabumi (West Java) in the collections of the Tring Museum. — I have much pleasure

Notes from the Leyden Museum, Vol. XVI.

in dedicating this conspicuous species to Walter von Rothschild, Esq., the founder of the above quoted Museum.

Obs. The Longicorns described by van Lansberge ¹⁾ under the names of *Ephies palliatus* and *Ephies ligystropteroïdes* both belong to the same genus as the species here described. The latter is very closely allied to *ligystropteroïdes*, but it is larger and proportionately broader, the elytra are entirely of a red colour and more finely punctured, etc.

Aphrodisium tibiale, n. sp.

Length 33 millim.; breadth at the shoulders $8\frac{1}{4}$ millim. — Rather pale brown, the tip of the mandibles, the eyes, the four apical joints of the antennae (partly), the anterior and posterior margin of the prothorax, the lateral margins of the scutellum, the margins of the metasternum, and the base of the ventral segments, black. The insect is covered with a short pubescence which is velvety on the pronotum, scutellum and elytra ²⁾; the colour of the pubescence is ochraceous, strongly tinted with sepia on the elytra, and with a golden hue on the sterna.

The sculpture of the head is hidden by the pubescence, but a smooth line along the vertex is visible; the inter-antennary ridge is deeply emarginate in the middle and pointed laterally; the antennae are slender and reach slightly beyond the base of the apical third of the elytra; the scape is short, slightly longer than half the length of the 3rd joint and somewhat widened out at the top on the outside; the 3rd joint once and a half as long as the 4th; the 4th to 7th equal in length to each other, the succeeding joints slightly decreasing in length, the apical one however somewhat longer.

The anterior margin of the pronotum is distinctly pro-

1) Notes from the Leyden Museum, Vol. VI (1884), pp 91 and 92.

2) A short keel on the pronotum in front of the scutellum, and the shoulders, the scutellar region and the costae on the elytra are destitute of pubescence, which perhaps results from abrasion.

duced in the middle and separated from the disk by an obsolete groove; just before the base the thorax is narrowly constricted; the disk is provided with four obsolete tubercles which are arranged two by two; between the posterior pair a short naked keel is present; the sides of the prothorax are strongly angulated. The scutellum has a somewhat elongate triangular shape.

The elytra are rounded at the shoulders; their lateral margins are sinuate, the sutural ones dehiscent from a little beyond the middle which makes the elytra narrower towards the end than at the base; the apices are rounded both at the sutural and external angles, more broadly however at the latter; each elytron is provided with three slightly raised longitudinal lines of which the central one is distinctly curved.

The under surface of the head is sparsely wrinkled. The prosternum between the anterior coxae is rounded, slightly raised along the middle. The posterior margin of the 5th ventral segment is nearly straight, that of the 6th broadly, not deeply emarginate with rounded lateral angles; an impressed line runs along the middle of the 6th segment.

The middle and hind legs are elongate, the femora of the latter do not fully reach to the end of the elytra and the tibiae of the same pair are not compressed but rounded, and slightly constricted at some distance from the apex.

One male example from the Khasia Hills (Assam) in the collections of the Tring Museum.

It may be that this somewhat aberrant species is not correctly referred to the genus *Aphrodisium*. But I do not see any better place for it.

Leyden, November 1894.

NOTE XIII.

ON TWO NEW BIRDS OF PARADISE

BY

J. BÜTTIKOFER.

Some weeks ago the Leyden Museum was kindly presented by Mr. J. Bensbach, of late Resident at Ternate, with two Birds of Paradise which belong to two different, hitherto undescribed, species.

Craspedophora Bruyni, n. sp.

Adult male. Above velvety black with a rich purplish gloss, produced by each feather having a broad glossy purplish subterminal bar, quills black, edged on the outer webs with shining purplish blue, tertiary feathers and upper wing-coverts velvety black, less strongly glossed with purplish than the back, under wing-coverts purplish black; tail black, glossed with purple, the central pair velvety black, narrowly edged with steel-blue; entire head and neck, including chin and upper throat, shining purple, centre of crown greenish steel-blue; a large pectoral shield, covering lower throat, chest and upper breast, black, very richly glossed on lower throat and chest with metallic bluish green, which color is shading off into rich purple on the upper breast; the lateral feathers of this shield are directed outwards; they are very broad and rather broadly tipped with steel-green. The steel-green as well as the purplish gloss on the pectoral shield are produced by the

Notes from the Leyden Museum, Vol. XVI.

velvet-black feathers being terminally edged with these colors. The pectoral shield is bordered at its lower end by a narrow pectoral bar of oily green, which color is shading off into the purplish brown of the lower breast. Abdomen, flanks and basal half of the long, lateral tufts purplish brown, the terminal half, thighs and under tail-coverts brownish black, vent and inner vanes of some of the lateral tuft-feathers silky white. The lateral tufts are reaching far beyond the tip of the tail, having a length of 27 cm., the shafts of the tuft-feathers are destitute of barbs on their terminal half, and therefore resemble, though very much weaker and not recurved, in some way the shafts in the flank-tufts of *Seleucides niger*. Iris red (Bensbach), bill and feet black. Wing 18,5 cm.; tail 8,5; culmen 6,4; tarsus 4,4.

Habitat: Mounts Arfak, N. W. New Guinea.

This species is, in general appearance and in the shape and size of the bill, closely allied with *C. magnifica*. From this latter it differs, however, in many essential points. The metallic color on the top of the head is steel-blue and confined to the centre of the crown, while in *C. magnifica* it is green and covers the whole head and the occiput; the metallic jugular shield is beginning halfway on the throat only instead of at the chin, and is extending farther down on the breast, shading off into a broad glossy purplish cross-bar, which is wanting in *C. magnifica*, the feathers of this shield are narrower and the metallic color is spread to a greater extent; the shield has, on account of the peculiar structure of the feathers, a velvety appearance and reminds, to a certain extent, the plumage of *Manucodia Comrii*, while in *C. magnifica* the shield is entirely smooth; the long and very broad lateral shield-feathers remind the terminal feathers in the shield of *Seleucides niger*, while they are entirely wanting in *C. magnifica*. Other differences are the white feathers on the vent, the long wire-like shafts of the flank-plumes and the much shorter tail, the central feathers of which are velvety black instead of metallic green; moreover the

Notes from the Leyden Museum, Vol. XVI.

primaries are obviously narrower and less truncated than in *C. magnifica*.

This species I propose to name, according to the wish of Mr. Bensbach, in honor of the late Mr. Bruyn, who, during a long period, very much increased our knowledge of the Ornis of the Papuasian Region.

Janthothorax, n. g.

This new genus is to be placed near *Craspedophora* on account of its general appearance, its bill and the large flank-tufts; it differs, however, by the first primary being emarginate near the end of the inner web, a characteristic which it has in common with the genera *Astrapia* and *Parotia*, and further by the narrow and very much elongated central pair of tail-feathers, a peculiarity which it has in common with the lately described *Lamprothorax Wilhelminae* Meyer.

Janthothorax Bensbachii, n. sp.

Entire head all round metallic green, top of head and occiput more golden green, hind neck, back, rump and upper wing- and tail-coverts velvety black with a purplish gloss, shining green under a certain light, many of the feathers broadly tipped with ochraceous brown, which possibly will indicate that the specimen has not quite assumed the plumage of the adult bird. Quills earthy brown, faintly glossed with steel-green; tail earthy brown, darker on the outer webs which are narrowly edged with metallic green, central pair of tail-feathers nearly double the length of the outer pairs, narrow and straight, width nearly 1 cm., with both webs equally and regularly developed from the base to the tip, velvety black and richly glossed with metallic green. Chin glossy bluish green, upper throat metallic green like the sides of the head; a rather large gular spot of small scaly feathers of a bronzy green color is surrounded in front and on both sides with purplish bronze; entire chest

and breast purplish blue, the feathers on the chest closely set and rounded at the tip, the breast-feathers much longer; under wing-coverts, abdomen, vent and under tail-coverts earthy brown; from the flanks springs a very rich tuft of straight egretiform feathers, earthy brown on the basal, sooty brown on the terminal half and reaching beyond the outer tail-feathers. The basal half of the feathers in the whole plumage of this bird is earthy brown. Iris red (Bensbach), bill and feet black. Wing 20 cm.; tail 13, central pair 22; culmen from base of skull 4,8; tarsus 4,2.

Habitat: Mounts Arfak, N. W. New Guinea.

This species has its nearest allies in the dark-colored genus *Craspedophora*, and its bill does not differ much in shape and size from that of *C. intercedens*. The distribution of the metallic colors, however, is quite different. A regular breast-shield is wanting, and the flank-tufts, bent downward in *Craspedophora*, are straight. The most striking difference is found in the narrow, straight and very long central tail-feathers, a characteristic which, as already said, it has in common with *Lamprothorax Wilhelminae* Meyer. This latter species, however, is related with *Lophorhina*, and is showing no affinity whatever with *Craspedophora*.

I am much pleased to name this species after Mr. J. Bensbach, who kindly presented our Museum with the two new species of Paradise-birds.

Besides these two species the Leyden Museum recently obtained a third species, also from the Mounts Arfak, which turns out to be the above mentioned

Lamprothorax Wilhelminae A. B. Meyer.

Abhandl. u. Ber. Kgl. Zool. u. Anthropol. Mus. Dresden, 1894/95, No. 2 (mit Tafel).

Our bird fully agrees with Dr. Meyer's typical specimen and shows, like the latter, some remnants of the immature plumage. The two long central tail-feathers are straight

Notes from the Leyden Museum, Vol. XVI.

in our specimen and 14,7 cm. long instead of 13,2 as mentioned by Dr. Meyer. The color of these feathers is inaccurately represented on Dr. Meyer's plate and does not agree with the description, reminding much the color found in some species of *Tanysiptera*, while in reality it is metallic green with a gloss of steel-blue under certain lights.

Leyden Museum, 15 November 1894.

P.S. Just before the present paper was to leave the press, I find that I had entirely overlooked the description and plate of Dr. Oustalet's *Craspedophora Mantoui* in the "Nouvelles Archives du Muséum d'histoire naturelle", 1892, p. 218, pl. XV.

Craspedophora Bruyni mihi (vide antea) is certainly very closely allied with *C. Mantoui*, agreeing with it in the general color of the plumage, the size and shape of the bill, the color on head, throat and jugular shield and especially in the structure of the feathers of this latter. On the other hand it differs, however, in having the vent white instead of uniform with the abdomen, further in the central pair of tail-feathers being not metallic green when viewed from the front-side, in having the tail much shorter (8,5 cm. instead of 12) though it does not show the least remainders of the horny sheaths of young feathers, and in the much longer lateral tufts and especially the very long, wire-like terminal parts of the shafts of the tuft-feathers. As the types of both species appear to be fully adult and in full dress, the above mentioned differences may be considered sufficient to distinguish them from each other.

NOTE XIV.

ON THE IMMATURE DRESS OF MICROGLOSSUS
ATERRIMUS

BY

J. BÜTTIKOFER.

Amongst a small number of birds, recently presented to the Leyden Museum by Mr. J. Bensbach, of late Resident at Ternate, I found a very interesting specimen of the Great Black Cockatoo from the Arfak Mountains, New Guinea, a specimen which I consider to be immature on account of the great extent of yellow on the black plumage and of the horny white color of the point of the bill and the front of the lower mandible.

Unfortunately we know very little about the immature dress of this species, no nestling having been described as yet, and what is stated to characterize the young bird is the whitish tip of the upper and the horny white front of the lower mandible, as well as the more or less developed yellow cross-bars or vermiculations on the under wing- and tail-coverts and the lower surface of the body.

No doubt these traces of yellow on the otherwise entirely black plumage are only the last remnants of a more richly yellow-barred juvenile dress, and really is such a dress represented in our above mentioned specimen, the description of which is as follows:

General color, with the exception of the tail, black, long crest-feathers fully developed, black, some of them tipped with fulvous, and nearly all showing a series of

Notes from the Leyden Museum, Vol. XVI.

four or five narrow lateral spots of yellow on their basal half, probably being the remainders of yellow cross-bars. Front and feathers behind the bare face pure black, crown also black, each feather with a yellow cross-bar near the base; neck mantle, back, all the upper and under wing-coverts, throat, breast, abdomen and flanks black, very conspicuously barred across with yellow, which color is more or less represented by white on the upper wing-coverts, each feather being barred across with four or five yellow bands. Vent, under and upper tail-coverts yellow with black shafts and very irregular black vermiculations; quills black, primaries on basal half of inner web yellow, varied with black, outer secondaries inside and outside edged with yellowish white near the tip, inner secondaries very broadly edged with yellow on both webs, this color being speckled with black and leaving, on the innermost secondaries, only a narrow central streak of black. Tail yellow, the two central feathers on both webs and the outer feathers on the outer web only, very richly speckled with black. All the tail-feathers have the whole shaft and a very narrow shaft-streak pure black.

Unless there can be disposed of larger material, especially of nestlings and young birds, we are not fully entitled to decide whether this specimen will represent the mere immature dress or if we have to deal with a case of xanthisme, not rarely observed amongst the Parrots.

Leyden Museum, 19 November 1894.

NOTE XV.

SECOND SUPPLEMENTARY LIST OF THE DESCRIBED
SPECIES OF THE LONGICORN GENERA
ZONOPTERUS, PACHYTERIA AND APHRODISIUM¹⁾

BY

C. RITSEMA Cz.

Zonopterus

- Hope. Trans. Linn. Soc. London, XIX, 1843, p. 110.
Redemanni Nonfried. Deuts. Entom. Zeits. Ceylon.
Jahrg. 1891, 2^{tes} Heft²⁾, p. 274.
Bosschae Rits. Notes Leyd. Mus. 1894, p. 107. Borneo.

Pachyteria

- Serville. Ann. Soc. Ent. France, 1833, p. 553.
Pasteuri Rits. Notes Leyd. Mus. 1892, p. 213, Nias.
and 1893, p. 16.
lugubris Rits. l.c. p. 215. Nias.
borneoensis Rits. l.c. p. 218. Borneo.
Batesi Rits. Notes Leyd. Mus. 1893, p. 14³⁾. Borneo.

Aphrodisium

- Thomson. Syst. Ceramb. 1866, p. 173.
tibiale Rits. Notes Leyd. Mus. 1894, p. 159. Assam.
Leyden, November 1894.

1) See: Nederlandsch Tijdschrift voor Entomologie, Vol. XXXII (1888), p. XXIX. — Notes Leyd. Mus. Vol. XII (1890), p. 175.

2) Published in March 1892.

3) Published in October 1892.

NOTE XVI.

A NEW CURCULIONID OF THE GENUS
OMMATOLAMPUS

DESCRIBED BY

Dr. K. M. HELLER.*Ommatolampus nigrolimbatus*, n. sp.

O. tetraspiloto Guér. minor et non nihil angustior, *O. haemorrhoidali* Wiedem. latior, ferrugineus, elytris anguste nigro-limbatis; rostro nigro, supra et apice interdum rufescenti, ut in *tetraspiloto* sed minus ruguloso-punctato, dorso supra scrobes linea abbreviata subimpressa; antennis nigris, clava latitudine longitudine feminae baud duplo, maris duplo latiore; prothorace latitudine longiore, lateribus leniter rotundatis, antice paulo constrictis, maxima cum latitudine prope pone medium, lobo scutellari minus quam in *O. tetraspiloto* producto, subtiliter et remote, in lobo scutellari profundius punctato, linea mediana impunctata, margine apicali et basali, in lobo scutellari latius, nigrolimbatis, disco interdum utrinque litura nigricante; scutello nigro, oblongo-triangulari, basi punctato; elytris latitudine sesqui (prothorace tertia parte) longioribus, ferrugineis, singulis anguste nigro-limbatis, subtiliter quinque punctato-striatis, stria quinta in medio abbreviata, seriebus quinque reliquis externis striato-punctatis, punctis remotis, singulis area infuscata transversa, plus minusve distincta, circumdatis; pygidio ferrugineo, basi infuscato, apice late impressum et rubro-flavescenti-ciliato, sat parce, maris basi fortius, punctato, punctis setuligeris; corpore infra nigro,

Notes from the Leyden Museum, Vol. XVI.

metasterno lateribus, segmento abdominali primo utrinque albo-sericeo-pruinosis, prothorace lateribus in triente superiore, episternis mesothoracis totis, metathoracis margine antico et superiore nigris exceptis, segmentis abdominalibus 1—5, macula laterali subtriangulari, segmento ultimo in media parte aut toto et pedibus rufo-ferrugineis his basi apiceque infuscatis, tarsis nigris.

Long. (rostr. non comput.) 23—25 millim., lat. ad hum. 6,4—7,5 millim.

Hab. Java occ.: Sukabumi 2000', Mous Tjikorai 4000', Mons Gede 4000' leg. H. Fruhstorfer, Museum Lugdun., Dresdense et Tring.

Elongate, ferruginous, elytra narrowly bordered with black. Head and antennae black. Rostrum shorter than the middle line of the prothorax (5—6 mm.), black, sometimes somewhat reddish above, as in *tetraspilotus*, but less rugosely punctured, above the antennal grooves with a short and slightly impressed middle line, the sides with a flat longitudinal ridge, in other respects very similar to *tetraspilotus*, which I believe, like Roelofs, to be identical with *Cuvieri* (cf. Notes Leyd. Mus. XIII, p. 116). Antennae differently shaped in both sexes: third joint of funicle of male not longer than broad, 6th distinctly transverse, club not twice as broad as long, of female third joint of funicle distinctly longer than broad, 6th scarcely transverse, club at least twice as broad as long. (I have only a female of *O. tetraspilotus* for comparison, but I think that species will show the same sexual differences). Prothorax longer than broad, the sides slightly and subequally rounded, with the greatest breadth about the middle, and the scutellar lobe less produced than in *tetraspilotus*, finely and sparsely punctured, a stripe along the middle without punctures, anterior and posterior margin narrowly, the scutellar lobe more broadly bordered with black, disk sometimes on both sides with an obsolete obscure vitta. Elytra twice as long as broad, ferruginous, each of them

narrowly bordered with black, the disk with 5 delicate, remote punctate-striate lines, the 5th abbreviated before the middle, the exterior striae only striate-punctate, the punctures ordinarily surrounded by a transverse fuscous shade. First interstice not enlarged at the apex. (My specimen of *O. tetraspilotus* shows the second stria outwardly convex towards the apex). Pygidium ferruginous, its base (often covered by the elytra) and sometimes a narrow, posteriorly abbreviated line along the middle, of a dark colour; the apex impressed, the impression rugose, and covered with reddish yellow bristles, which are moderately densely set; in the male the base of the pygidium is more deeply punctured.

Underside and tarsi black, lateral margins of prosternum, episterna of metathorax along their inferior margin, the abdominal segments on the sides with a subtriangular spot (sometimes connecting with the opposite one by a ferruginous line running along the posterior margin of the segment) and the analsegment (sometimes the black base and apex excepted), reddish ferruginous. Episterna of metathorax more strongly punctured than in *O. tetraspilotus*. Femora and tibiae reddish ferruginous, the first at base and apex dusky.

The male differs from the female by the smaller size, by the structure of the antennae as is mentioned above, and by the stouter pygidium, which is more strongly punctured at the base.

In all other respects like *tetraspilotus*.

The determination of the known species of the genus *Ommatolampus* will be facilitated by the following table:

1. Prothorax without an elevated middle line, elytra delicately striated.
2. Pygidium with a bilobed, somewhat ashy spot at the apex, elytra uniformly coloured, long. tot. 37 mm. *stigma* Pasc., Andaman.
- 2'. Pygidium without such a spot.

Notes from the Leyden Museum, Vol. XVI.

- 3. Elytra marked with black band or spots.
- 4. Elytra with an oblique black band near the middle *tetraspilotus* Guér.
(= *Cuvieri* Boh.), Java.
- 4'. Elytra with a black patch on each side.
pictus Roelofs, Sumatra.
- 3'. Elytra uniformly coloured, ferruginous, only bordered with black. *nigrolimbatus* Heller, Java.
- 1'. Prothorax with a flat elevated line along the middle, elytra strongly striated.
- 5. Femora reddish in the middle . . . *Germari* Boh. (= *Allardi* Chevr.), Java.
- 5'. Femora entirely black *haemorrhoidalis* Wied., Bengal.

For my knowledge of this new species I am indebted to Mr. C. Ritsema Cz., through whose kindness our Museum has received a specimen of each sex.

Royal Zoological Museum,
Dresden, December 1894.

NOTE XVII.

FISHES FROM THE BRANTAS-RIVER, JAVA,

BY

Dr. C. L. REUVENS.

In January of this year the collections of the Leyden Museum were increased by 21 fishes from the mouth of the Brantas-river, East Java, collected by Mr. J. Moll. I will give here an enumeration of the species, a total of 11, together with the corresponding material in our Museum.

I must return many thanks to Professor Max Weber at Amsterdam for his kind assistance in the determination.

1. *Gobius giuris* Ham. Buch.

Günther, Cat. of Fishes, T. III, p. 21.

Day, Fishes of India, p. 294, pl. 66, fig. 1.

N° 5201¹⁾. 4 Ex. Length 95, 113, 135 and 162 mM.

For Museum material see N. L. M. 1894, p. 150.

2. *Osphronemus trichopterus* (Pall.).

Günther, Cat. of Fishes, T. III, p. 384.

Bleeker, Atlas Ichthyologique, T. IX, tab. 395, fig. 4.

Bleeker, Mémoire sur les Poissons à pharyngiens labyrinthiformes, p. 21. Verh. Kon. Ak. Wet. Amst., T. XIX, 1878.

N° 5202. 1 Ex. Length 93 mM. Outer ray of ventral fin 66 mM.

Mus. mat. N° 1596. 4 Ex. Sumatra. Coll. S. Müller.

N° 1597. 2 Ex. Coll. v. Swin-
deren, 1844.

1) Number of the bottle in the Museum-collection.

N° 1598. 6 Ex. Borneo. Coll. Schwaner, 1846.

N° 1599. 3 Ex. Borneo. Coll. S. Müller.

N° 1600. 2 Ex. Java. Coll. Kuhl and v. Hasselt.

N° 1601. 1 Ex. Java, Krawang.

N° 1604. 1 Ex. Batavia. Coll. Bleeker.

N° 1932. 3 Ex. South Sumatra, Soekadana. Coll. J. C. v. Hasselt, 1883. Very distinct brown-edged ocelli on the vertical fins; a zig-zag black band from the mouth to the cauda, where it ends in a distinct black spot. This diagnosis corresponds with that of Bleeker's *Trichopus Leerii* (Günther's var. γ).

N° 5212. 169 Ex. East Indian waters. Coll. Bleeker. Length 35—107 mM. All the specimens with a black spot on the middle of the side, another on the root of the caudal fin (Günther's var. α).

3. *Ophiocephalus striatus* Bl.

Cuvier et Valenciennes, Hist. nat. des Poissons, 4° Ed., T. VII, pp. 313 and 318.

Günther, Cat. of Fishes, T. III, p. 474.

Day, Fishes of India, p. 366.

N° 5203. 1 Ex. Length 222 mM. Four entire and two half scales between the anterior part of the dorsal fin and the lateral line.

Mus. mat. N° 1658. 1 Ex. Java. Coll. Kuhl and v. Hasselt?

Notes from the Leyden Museum, Vol. XVI.

N° 1659. 1 Ex. Malay Archipelago. Berlin Museum, 1843.

N° 1660. 1 Ex. Batavia. Coll. Bleeker.

N° 2188. 1 Ex. Pontianak.

N° 5213. 44 Ex. East Indian waters. Coll. Bleeker. Length 49—450 mM.

N°. 5221. 1 Ex. Burma. Coll. L. Fea, 1893.

Besides this material in spirits there are in the collection of mounted fishes three good preserved specimens of *Ophiocephalus striatus*, length 330, 370 and 555 mM. These are the types of *O. planiceps* Kuhl and v. Hasselt (Cuv. & Val., T. VII, p. 318). Valenciennes states that *O. planiceps* is »extrêmement ressemblant aux précédens, surtout par les »dents latérales d'en bas. Sa différence la plus sensible consiste dans une autre disposition dans les rugosités des »écailles''. His description of the scales of *O. stratus* Bl. is quite applicable to those of *O. planiceps*, while, moreover, in the roughness of the scales of one and the same animal a slight difference may be observed.

The specimen sub N° 1658 is probably collected by Kuhl and v. Hasselt, though Valenciennes has not mentioned it.

4. *Rhynchobdella aculeata* (Bl.).

Günther, Cat. of Fishes, T. III, p. 540.

Day, Fishes of India, p. 338, pl. 72, fig. 1.

N° 5204. 3 Ex. Length 171, 190 and 222 mM.

Mus. mat. N° 1349. 4 Ex. Java. Coll. Kuhl and v. Hasselt.

N° 2990. 1 Ex. Moulmein. Coll. F. Day, 1876.

N° 5214. 9 Ex. Malay Archipelago. Coll. Bleeker.

N° 5222. 3 Ex. Burma. Coll. L. Fea, 1893.

5. *Mastacembelus unicolor* K. & v. H.

Cuvier et Valenciennes, Hist. nat. des Poissons,
4° Ed., T. VIII, p. 333.

Günther, Cat. of Fishes, T. III, p. 542.

Day, Fishes of India, p. 339, pl. 72, fig. 3.

N° 5205. 6 Ex. Length 111—161 mM. In one of these specimens nearly no trace of the light coloured spots can be observed, in two others most of them are flowing together so as to form a long streak.

Mus. mat. N° 1354. 2 Ex. Java. Coll. Kuhl and v. Hasselt. Types of the species. One of them (108 mM.) shows some remainders of the spots, the other not at all.

N° 5215. 32 Ex. Malay Archipelago. Coll. Bleeker. Length 43—485 mM. Besides the more or less distinctness of the spots and their confluence into streaks, we observe in this series a variation in the coloration of the dorsal and anal fin: in some examples the dark basal streak is interrupted at regular intervals by the yellow colour of the margin.

6. *Macrones micracanthus* (Blkr.).

Bleeker, Atlas Ichth., T. II, p. 59, tab. 74, fig. 3.

Günther, Cat. of Fishes, T. V, p. 76.

N° 5206. 1 Ex. Length 106 mM., longest barbel 63 mM.

Mus. mat. N° 2947. 1 Ex. Java, Krawang. Coll. S. Müller.

N° 2948. 1 Ex. Java. Coll. K. and v. H.

N° 2963. 1 Ex. Java. Coll. K. and v. H.

Notes from the Leyden Museum, Vol. XVI.

N° 3009. 1 Ex. Java. Coll. Kuhl and v. Hasselt ¹⁾.

N° 5216. 29 Ex. Borneo, Sumatra, Java. Coll. Bleeker. Typical specimens. Length 57—150 mM.

7. *Osteochilus microcephalus* C. V.

Bleeker, Atlas Ichth., T. III, p. 66, tab. 112, fig. 1.
Günther, Cat. of Fishes, T. VII, p. 43.

N° 5207. 1 Ex. Length 102 mM.

Mus. mat. N° 5011. 2 Ex. S. Sumatra, Soekadana. Coll. J. C. v. Hasselt, 1883.

8. *Barbus armatus* C. V.

Bleeker, Atlas Ichth., T. III, p. 84, tab. 125, fig. 1.
Günther, Cat. of Fishes, T. VII, p. 111.

N° 5208. 1 Ex. Length 168 mM. (caudal fin mutilated).

Mus. mat. N° 2502. 1 Ex. Java. Coll. Kuhl and v. Hasselt. Type of the species, mentioned by Cuvier and Valenciennes. Length 200 mM. (C. V. 7½ pouces).

N° 2503. 3 Ex. Java, Krawang. Coll. S. Müller.

N° 5217. 11 Ex. Java, Sumatra. Coll. Bleeker.

9. *Barbus javanicus* Blkr.

Bleeker, Atlas Ichth., T. III, p. 96, tab. 138, fig. 1.
Günther, Cat. of Fishes, T. VII, p. 118.

1) Though Kuhl and v. Hasselt collected three specimens of this species, it seems that they have been overlooked by Valenciennes during his residence at Leyden, as he does not mention a species agreeing with *M. micracanthus*.

N° 5209. 1 Ex. Length 112 mM. (caudal fin mutilated).

Mus. mat. N° 5218. 19 Ex. Java. Coll. Bleeker. Typical specimens. Length 108—305 mM.

10. *Barbichthys laevis* (C. V.).

Bleeker, Atlas Ichth., T. III, p. 49, tab. 119, figs. 1 and 2 (nec *Labeobarbus leptocheilus* Mus. Lugd. Bat.).
Günther, Cat. of Fishes, T. VII, p. 158.

N° 5210. 1 Ex. Length 165 mM. Though the mouth is mutilated, I feel sure of the correctness of my determination, the breadth of the suborbital bones being a sufficient specific character.

Mus. mat. N° 2442. 1 Ex. Java, Krawang. Coll. S. Müller.

N° 2443. 1 Ex. Borneo. Coll. S. Müller.

N° 2531. 1 Ex. Java. Coll. Kuhl and v. Hasselt. Type of *Dangila lipocheilus* C. V. Length 220 mM. (C. V. 8 pouces).

N° 5219. 33 Ex. Borneo, Sumatra, Java. Coll. Bleeker. Length 75—190 mM.

11. *Acanthopsis choerorhynchus* (Blkr.).

Bleeker, Atlas Ichth., T. III, p. 9, tab. 1, fig. 3.
Günther, Cat. of Fishes, T. VII, p. 365.
Day, Fishes of India, p. 608, pl. 155, fig. 1.

N° 5211. 1 Ex. Length 112 mM.

Mus. mat. N° 4977. 5 Ex. Sumatra. Coll. Bleeker. Typical specimens. Length 101—176 mM.

N° 5220. 1 Ex. Burma. Coll. L. Fea, 1893.

Leyden, December 1894.

NOTE XVIII.

ON SOME NEW BRENTHIDAE FROM
JAVA AND SUMATRA

BY

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The present note is based upon a small collection of Brenthidæ, belonging to the Leyden Museum, kindly placed in my hands by Mr. Ritsema. The greater number of specimens are from Java and Sumatra, and amongst well-known species I have found some interesting novelties of which I give here the descriptions.

Allæodromus

(ἄλλοιος = diversus, δρόμος = cursus),

n. g. Taphroderinarum.

Corpus gracile, elongatum. Caput vix longius quam latius, postice gradatim angustius, occipite elevato, convexo, oculis mediocribus, collo distincto, simplici strictura separato. Rostrum brevissimum, parte basali capitis latitudine, supra foveolata, parte antica angustiore, apice ampliato, subtruncato; mandibulis minimis. Antennae ad latera rostri insertae, articulis 4° et 5° submoniliformibus, 6°—8° unilateraliter productis, tribus apicalibus majoribus, compressis. Prothorax ut in gen. *Cyphagogo* sed magis elongatus, postice rotundato-amplius, supra canaliculatus, cono dorsuali subacuminato, supra marginem apicalem oblique desinente. Elytra ut in genere indicato, dorso striata,

Notes from the Leyden Museum, Vol. XVI.

striis impunctatis, interstitiis latis, depressis, basin versus curvatis. Pedes anteriores et mediani normales; postici valde elongati, difformes, femoribus clavatis et pedunculatis, apicem elytrorum superantibus, pedunculo gracili, recurvo, clava postice obtuse subacuminata; tibiis brevissimis, subpatellaeformibus, apice intus dentatis; metatarso longissimo, paulo brevior quam femore, lato, valde robusto, lobo unciformi erecto, introrsum posticeque curvato basi instructo; deinde longitudinaliter lateque excavato, excavationis margine externo profunda incisura a lobo prædicto separato, basi subdentato et intus curvato, margine interno ciliato, apicem versus intus levissime inclinato: tarsorum articulo 2° compresso, longiore quam 3°, a latere viso, basi dentato; articulo unguifero gracili. Processus prosterni intercoxalis basi leviter impressus, deinde valde angustatus; metasternum convexum, obsolete in medio canaliculatum; segmenta duo abdominis basalia brevia, convexa, vestigio suturae in medio obsoleto, lateribus distincto.

The very interesting structure of the hind feet of this insect renders it one of the most singular of the entire subfamily. It is allied to *Calodromus* Guér. but chiefly different by a distinct neck, by the shape of the prothorax and of the posterior feet. The hind tibia of *Allæodromus* is reduced, as in *Calodromus* Guér., to a very short thick mass, whilst the 1st joint of the tarsus (metatarsus) is very long. In *Calodromus* the metatarsus is nearly as long as the entire body, dilated and deeply excavated inwardly at the base, thence straight, with an erect spine at the upper side before the middle, and the apex produced beyond the insertion of the other joints of the tarsus; in *Allæodromus* the metatarsus is a little shorter than the hind thigh, more robust, with a broad, deep, longitudinal furrow above, and an erect lobe, obtusely pointed behind and curved inwards, at the base.

Allæodromus insignis, n. sp.

Elongatus, angustus, glaber, rufo-testaceus, nitidus,

Notes from the Leyden Museum, Vol. XVI.

elytris dilutioribus, prothoracis margine antico et postico, femorum tibiærumque basi et apice obscurioribus; capite obsoletissime rareque punctulato, rostro brevissimo, basifido, in medio foveolato; prothoracis lateribus antice fortiter excavatis, postice rotundato-ampliatis, dorso canaliculato; elytris apice attenuatis, supra convexis, anguste striatis, striae impunctatis, interstitiis latis, deplanatis, basin versus arcuatis.

Long. $4\frac{1}{2}$ mill.

Hab. Sumatra occid. (Tambang Salida). — A single specimen collected by Mr. J. L. Weyers.

The head is a little longer than broad, narrower at the base, very finely and scarcely punctured above, the occiput is raised, the eyes are moderate, rounded, a little prominent. Rostrum shorter than the head, foveolate at the base, narrower between the antennae, scarcely widened at the apex. The antennae are shorter than the prothorax, clavate, compressed; the basal joint is short, stout, the 2nd is long, a little shorter than the 3rd and 4th joints taken together, the 3rd—5th nearly moniliform, the 6th—8th transverse, with the sides unequal in length; the 9th and 10th almost as long as broad, with the sides as in the preceding joints and the base narrower than the apex; the apical one is elongate, and pointed at the tip.

Prothorax shorter than the elytra and equalling them in width; the anterior portion is hardly curved at the sides, deeply excavated above so that the dorsal portion is reduced to a subacuminate keel which, at one third from the front margin, is obliquely sloping; the posterior part is enlarged and curved at the sides, impressed laterally at the base and provided with a short raised margin; the upper surface of the prothorax is furrowed in the middle.

The base of the elytra is slightly emarginate, the shoulders are rounded, the sides almost parallel, gradually narrower at the apical declivity and obtuse at the apex; convex above, a little depressed near the base, striate, the striae are impunctate, the interstices broad, smooth,

Notes from the Leyden Museum, Vol. XVI.

distinctly curved towards the base, the sutural interstice is more raised than the others, the next is broad at the base, thence gradually narrower and ending before the middle.

Anterior femora compressed at the sides, with the base curved; tibiae short, straight, a little angularly enlarged at the inside near the middle and provided with a spine-like tuft of hairs, the apex is spinous; tarsi short, with the 1st joint very narrow at the base, slightly longer than the 2nd. Median legs slender, femora club-shaped, tibiae very short, enlarged at the apex, metatarsus longer than the 2nd and 3rd joints taken together. Hind femora long, pedunculato-clavate; the peduncle is curved and slender, the club is enlarged inwardly, obtusely pointed at the tip and scattered with hairs; the tibiae are very short, reduced to a thick, compressed mass, curved inwardly and spinous at the apex; the metatarsus is very long, a little shorter than the hind femora, stout, broad, provided at the base with an erect lobe, obtusely pointed behind and curved inwardly; deeply and broadly excavate above, the margins are raised, the outer margin is more raised than the inner one, bent inwardly, toothed at its base and separated from the basal lobe by a deep notch; the internal margin is low at its base, clothed with a yellow pubescence and slightly curved inwardly near the apex; the 2nd joint of the hind tarsi is compressed, longer than the 3rd and toothed at the base.

Body beneath pale brick-coloured, metasternum furrowed in the middle, the two basal segments of the abdomen are convex.

Cerobates angustipennis, n. sp.

Elongatus, depressus, brunneo-rufus, nitidus, pedibus dilutioribus, capite basi in medio leviter inciso, angulis posticis subrectis, supra subglabro, minime convexo; rostri parte basali conica, glabra, haud sulcata, parte antica apici ampliata; antennis subbrevibus, scapo articulis duobus

Notes from the Leyden Museum, Vol. XVI.

sequentibus unitis longiore, articulis 5°—10° globuliformibus, apicali acuminato, vix longiore quam 10°; prothorace ovato, antice posticeque leviter coarctato, supra levi, deplanato, nitido; elytris duplo prothoracis longioribus, apicem versus valde angustis, apice rotundato, in dorso juxta suturam tristriatis, stria externa apicem pertinente, interstitio 2° a sutura latiore quam 1°, interstitio suturali lato; elytrorum lateribus striatis, obsoletissime punctulatis.

Long. 5½ mill.

Hab. Java (Simpar, Tegal Residency). — A specimen collected by Mr. Th. F. Lucassen.

Head short, transverse, hardly notched at the base in the middle, the posterior angles almost straight; very slightly convex above, shining, with a few very fine punctures. Rostrum almost twice the length of the head, not furrowed, the two portions equal, the basal one conical, slightly enlarged between the antennae, the anterior portion punctured, enlarged at the apex. Antennae short, the basal joint long, the 5th—10th globuliform, the apical joint pointed at the tip.

Prothorax ovate, depressed above, glabrous, shining.

Elytra longer than twice the prothorax and slightly broader than that in the middle, the base is emarginate, the shoulders rounded, the sides a little curved, the apical declivity very narrow, the apex rounded; depressed above, with three striae moderately curved along the suture, the 3rd stria (external) touching the apex, the sutural interstice is broad, the following very narrow towards the middle but not interrupted; at the sides the elytra are striate, the striae moderately curved, with very fine punctures.

Legs regular. Body beneath brown-red, the head and basal portion of the rostrum, the prosternum in front of the coxae and the abdomen are scaled; the head is furrowed in the middle, the metasternum and the basal segments of the abdomen are broadly excavated.

This species is allied to *C. tristriatus* Lund, which has likewise the prothorax not furrowed and the external su-

Notes from the Leyden Museum, Vol. XVI.

tural stria touching the apex of the elytra, but differs by the elytra being narrower in the apical portion, by the 2nd sutural interstice being broader than the 1st, and by the joints of the antennae which are shorter.

Cerobates adustus, n. sp.

Elongatus, depressus, castaneo-saturatus, nitidus, capite brevi, angulis posticis obtusis, basi truncato, in medio leviter emarginato; rostri parte basali conica, brevi, obsolete foveolata, subopaca, parte antica longiore, recurva, nitida, apici ampliata, levissime punctulata; antennis brevibus, articulo 1^o elongato, clavato, 3^o brevior, 4^o—5^o subovatis, caeteris globuliformibus, apicali brevi, acuminato, parce longiore quam 10^o; prothorace ovato, antice posticeque coarctato, supra planato, nitidissimo; elytris elongatis, declivitati apicali angustis, apici rotundatis, supra depressis, nitidis, juxta suturam basi tristriatis, striis arcuatis, stria externa brevi, e tertio basali oblitterata, interstitio 1^o a sutura in medio valde angusto, elytrorum lateribus et declivitate apicali striatis.

Long. 9 $\frac{1}{2}$ mill., lat. max. proth. 1 $\frac{3}{4}$ mill.

Hab. Java (Simpur, Tegal Residency). — A specimen collected by Mr. Th. F. Lucassen.

Head short, with the base emarginate in the middle, obtusely angulate at the sides. Basal portion of the rostrum as long as the head, conical, with an obsolete impression in the middle; the apical portion is longer, moderately curved, enlarged at the tip, very finely punctured. Antennae short, the 1st, 2nd and 3rd joints club-shaped, the 1st long, the 3rd longer than the 2nd, the 4th and 5th ovate, the remainder joints globuliform, the apical one is short and pointed.

Prothorax broad, ovate, smooth above, shining, not furrowed.

Elytra longer than twice the prothorax, emarginate at the base with the external angles rounded, slightly curved at the sides, distinctly narrower at the apical decli-

Notes from the Leyden Museum, Vol. XVI.

vity, rounded at the apex; depressed above, tristriate along the suture in the basal third, bistriate in the remainder portion, the striae are curved, the 1st interstice is broad at the base, very narrow but not interrupted towards the middle, at the sides the elytra are striated.

Legs regular. Body beneath chestnut-brown, head, basal portion of the rostrum and prosternum covered with brownish yellow scales; the rostrum between the antennae has a short median keel, the metasternum and the 2nd abdominal segment are deeply furrowed, the 1st segment is excavated, the apical one scaled.

Allied to the preceding species, but differing by its greater size, the broader prothorax and the 3rd stria (external) finishing at the basal third of the elytra. From *C. sexsulcatus* Motsch. this species may be distinguished by the shape of the 9th and 10th joints of the antennae, by the elytra being striate at the sides, and by its greater size and different colour.

Taphrocomister, n. g.

(τάφρος = fossa, κομιστήρ = lator).

A genere *Higonio* Lew. differt prothorace antice latiore, lateribus postice minus arcuatis; elytrorum declivitate apicali depressione circulari, excavata, intus granulata, marginibus prolatis, integris instructa.

This genus is allied to *Higonius* Lew., but differs by the prothorax being broader at the apex and less curved at the sides posteriorly, and by the apical declivity which is not obliquely sloping but truncate, showing a circular, concave depression with a projecting margin. This conformation of the apex of the elytra, nearly like that of some *Platypidae*, is an abnormal character in the *Brentidae*, and I believe it sufficient to base a new genus upon it.

Taphrocomister singularis, n. sp.

Rubro-brunneus, parum nitidus, squamosus, elytris rufo-ferrugineis, basi, lateribus, regione suturali, macula sub-

Notes from the Leyden Museum, Vol. XVI.

mediana nigro-brunneis, depressione postica brunnea; capite fere ut in *H. Poweri* Lewis, protuberantiis superciliiformibus conspicuis, recurvis, squamosis, rostro basi protuberantiis tuberculiformibus ad latera instructo, in medio sulcato; regione antennali subovata, deplanata, sulcata et squamosa; parte antica paulo recurva, nuda, apice minime ampliato; antennarum articulis medianis brevissimis, apicalibus majoribus; prothoracis dorso canaliculato, regulariter punctato; elytris costato-sulcatis.

Long. 4 mill.

Hab. Sumatra occid. (Tambang Salida). — A specimen collected by Mr. J. L. Weyers.

Head broader than long, channelled in the middle, with the sides raised, curved, scaled, forming over the eyes eyebrow-like excrescencies; eyes moderate, scarcely visible from above; basal portion of the rostrum broad, very short, with raised, scaled, tuberculiform excrescencies at the sides; the median portion of the rostrum is subovate, depressed, scaled, furrowed in the middle, the remainder portion is curved, narrower, hardly broader at the tip, and naked. Antennae short, rather stout, slightly compressed, with the 3rd joint obconical, the 4th to 8th very short, transverse, the 9th and 10th larger, transverse when viewed sideways, nearly as long as broad viewed from above; the apical joint is shorter than the two preceding ones, ovato-conical.

Prothorax subovate, narrower anteriorly than at the base, but not so narrow as in *Higonius Poweri* Lew., enlarged posteriorly, moderately convex above, slightly depressed in the apical third, furrowed in the middle, punctured, the punctures scaled.

Elytra emarginate at the base, slightly enlarged at the sides; the apical declivity is perpendicular, circular, and concave, with the margin raised, and laterally projecting outwardly, the excavate surface is granulated, slightly scaled at the sides, striate towards the suture; the elytra are furrowed above, the 1st furrow is narrower than the

others, all are impunctate; the interstices are raised, costiform, equal (the 1st excepted), a little narrower than the furrows.

Legs moderate and robust, tibiae short, the anterior ones unarmed. Body beneath brown-red, shining; head and basal portion of the rostrum furrowed in the middle; the intercoxal process of the prosternum is raised, narrow; the metasternum is furrowed in the middle, the two basal abdominal segments are convex, with the sutural line visible, the apical segment has two foveolae at the sides towards the tip.

Aræorrhinus Senna.

Bull. Soc. Entom. Ital. XXV, III, p. 325, 1893 (emend.).

A. longirostris, n. sp.

Rufobrunneus, sat nitidus, rostro pedibusque dilutioribus, capite brevissimo, transverso, basi in medio leviter emarginato, angulis posticis subacuminatis, supra convexo, impunctato; rostri parte basali brevi, parce longiore quam capite, subconica, ad antennis vix ampliata et supra canaliculata, parte apicali valde elongata, gracillima, filiformi, recurva, apice leviter latiore; antennis clavatis, articulis medianis subobconicis, 3^o longiore quam sequentibus, 9^o et 10^o subcylindricis, apicali quam precedente latiore, ovato-conico; prothorace oblongo, antice angustiore quam postice, supra basi leviter canaliculato; elytris declivitati apicali distincte attenuatis, apici rotundato-marginatis, supra regione suturali depressiuscula, lateribus convexis; sulcatis, sulcis impunctatis, interstitiis carinatis, leviter undulatis.

Long. 5½ mill.

Hab. Sumatra orient. (Serdang). — A single specimen collected by Mr. J. A. N. Schagen van Leeuwen.

This species is allied to *A. exportatus* Senna but distinguished by the rostrum which is more elongate and less curved, by the furrow between the antennae which

is shorter, by the elytra which are narrower towards the apex, and by the elytral interstices which are less undulate. Moreover the abdomen is less excavate, the apical segment differently shaped and the colour is less dark.

Head very short, transverse, convex above, impunctate, emarginate at the base in the middle, the posterior angles acute. The rostrum is longer than the prothorax, the basal portion short, conical, not furrowed at the base, the portion between the antennae slightly enlarged and furrowed; the apical portion very long, filiform, curved, with the apex moderately enlarged. Antennae club-shaped, almost as long as the head with the rostrum, the 4th—8th joints slightly obconical, equal; the 3rd of the same form but a little longer, the 9th and 10th larger, nearly cylindrical, but viewed sideways they are subovato-elongate; the apical joint is distinctly broader than the preceding one, ovato-conical.

Prothorax oblong, narrower at the apex than at the base, slightly curved at the sides, obsoletely channelled near the base, impunctate.

Elytra longer than twice the prothorax, emarginate at the base, hardly enlarged towards the middle, distinctly narrower at the apical declivity, rounded and marginate at the apex; furrowed above, the furrows impunctate, the interstices raised, narrow, a little undulate, broader at the base; the 1st interstice is narrow in the middle.

Legs as in *A. exportatus* Senna. Body beneath brighter coloured than above; the median line of the basal portion of the rostrum is raised, the sides oblique; metasternum furrowed, the abdomen excavated at the base, the apical segment strongly excavated at the sides.

Miolispa Fausti, n. sp.

♂. Capite parvo, quadrato, squamoso, brunneo, in medio tenue canaliculato; rostro gracili, sulcato usque ad tertium apicalem, squamoso, apice vix ampliato, brunneo-rufo; antennarum articulis medianis parce latioribus quam longio-

ribus, tribus apicalibus majoribus, 9° et 10° subcylindricis, 11° apice acuminato; prothorace robusto, ovato, lateribus regulariter arcuato, supra crebre rugoso-punctato, punctis interdum squamosis, in medio anguste sulcato, testaceo-rubro, lateribus brunneis, regione sulci margineque apicali et basali nigris; elytris elongatis, a tertio basali gradatim attenuatis, apice in medio breviter emarginatis externe rotundatis, ferrugineo-fulvis, lateribus et apice brunne-scentibus, regione suturali nigra; in dorso punctato-sulcatis, punctis regularibus, sulco 1° a sutura angustiore quam sequentibus, impunctato, 2° et caeteris punctatis, interstitiis angustis, elevatis.

♀. Praecipue differt capite brevior et latior, rostri parte basali brevior, parte antica longior, gracili, cylindrica, nigra; antennarum articulis medianis transversis, 9° paulo latior quam longior, 10° subquadrato, prothorace tertio apicali magis attenuato.

Long. ♂ 9 mill., ♀ 10½ mill.

Hab. Sumatra. — A male and a female in the Leyden Museum, the first captured in Deli by Mr. J. A. N. Schagen van Leeuwen, the second at Tambang Salida by Mr. J. L. Weyers. Another female specimen is in the private collection of my colleague Mr. J. Faust, to whom this species is friendly dedicated.

♂. Head small, square, slightly furrowed above; punctured and scaled; the base is moderately emarginate in the middle, the hind angles are nearly straight, the sides scattered with a few hairs. Rostrum longer than twice the head, furrowed up to the apical third, the basal portion is slightly shorter than the apical one, rather thickly scaled; the apical part is hardly enlarged at the tip and punctured. Antennae club-shaped, the median joints are a little broader than long, slightly obconical and almost equal, the three apical joints are as long as the preceding six joints taken together, the 9th and 10th subcylindrical, the 11th is acuminate at the tip and hardly shorter than the two preceding joints together.

Notes from the Leyden Museum, Vol. XVI.

Prothorax nearly as long as rostrum and head together, ovate, regularly curved at the sides, the apical margin is much narrower than the base; above it is furrowed, rugoso-punctate, the punctures are scaled.

Elytra elongate, with the base emarginate, the sides in the basal third are of the same width as the prothorax, thence regularly narrower, the apex is emarginate in the middle; above they are punctured and furrowed, the punctures regular, the interstices raised, narrow, the 1st furrow impunctate.

Legs regular, brown. Body beneath brown, shining, sometimes the prosternum and metasternum brown-red; the head, basal portion of the rostrum, coxae and apical segment of the abdomen are scaled; the metasternum is shortly channelled, depressed and punctured at the sides, the punctures with short hairs; the abdomen has a feeble impression and rare punctures at the base.

The female differs by the body being more robust, the head being shorter and broader, the rostrum at the base shorter and thicker, the apical portion longer, cylindrical, briefly furrowed at the base; the antennae are more robust, with the joints shorter, the median ones transverse; the prothorax narrower anteriorly, the elytra more parallel at the sides, the 1st furrow broader. The colour is also brighter, more reddish in the specimens examined, the median portion intensely black.

This species belongs to the group of *M. exarata* Desbr. but differs by the head and the antennae being a little broader, the prothorax ovate, regularly curved and more enlarged at the sides; it also differs in colour, and the band of whitish scales at the sides is wanting.

Miolispa sumatrana, n. sp.

♀. Nigra, elytris a basi usque ad declivitatem apicalem (lateribus et sutura exceptis) brunneo-rubris; capite quadrato, subrugoso-punctato, indistincte in medio canaliculato, angulis posticis subrectis; rostro basi capite vix bre-

vioire, sulcato, parte antica longiore, cylindrica, nigro-brunnea; antennis clavatis, sat robustis, nigro-brunneis, articulis funiculi latioribus quam longioribus, leviter obconicis, 9° et 10° majoribus, subquadratis, apicali duobus praecedentibus unitis brevior, apice obtuse acuminato; prothorace oblongo-ovato, antice angustato, postea regulariter rotundato-ampliato, supra rugoso-punctato, in medio sulcato, sulco et punctis in tertio apicali evanescentibus; elytris basi subtruncatis, lateribus ante medium leviter ampliatis, deinde attenuatis, apice breviter marginatis et subtruncatis, angulis externis rotundatis; supra punctato-sulcatis, sulco 1° angustiore quam sequentibus, impunctato, caeteris latioribus quam interstitiis, his angustis, carinatis.

Long. 9 mill.

Hab. Sumatra orient. (Deli). — A female collected by Mr. J. A. N. Schagen van Leeuwen.

Head small, square, almost rugoso-punctate above, indistinctly channelled in the middle; basal portion of the rostrum short, parallel at the sides, furrowed above, the apical portion longer, cylindrical, shining. Antennae moderately robust, club-shaped, scattered with some hairs.

Prothorax oblong-ovate, narrower in the apical third than at the base, rounded at the sides, rugoso-punctate above, furrowed in the middle, the punctures and the furrow are almost wanting towards the apex.

Elytra elongate, subtruncate at the base, the shoulders slightly callous, the apex margined and subtruncate; punctato-sulcate above, the 1st furrow only impunctate and narrower than the following, these latter are broader than the interstices and regularly punctured, the interstices are raised and narrow.

Legs regular. Body beneath dark brown, shining. Coxae, metasternum and abdomen red-brown; head with a few punctures, basal portion of the rostrum scaled; metasternum obsoletely channelled in the middle, punctured at the sides, abdomen at the base convex, smooth, apical segment foveolate, scaled.

Notes from the Leyden Museum, Vol. XVI.

Allied to *M. exarata* Desbr. but distinguished by the head being narrower, as long as broad, indistinctly channelled above, the antennae being shorter, with the median joints broader, the prothorax broader, more regularly rounded at the sides, the colour a little different and the band of whitish scales at the sides is wanting.

Miolispa elegans, n. sp.

♀. Nigra, antennis brunneis, singulo elytris linea basali mediana, macula pone medium apiceque rubro-ferrugineis; capite latiore quam longiore, angulis posticis prominulis, rotundatis, subauriculatis, supra sulcato et punctato; rostro basi brevi, trisulcato, parte antica longiore, cylindrica; antennarum articulis 4°—8° transversis, rectangularibus, 9° et 10° majoribus, apicali elongato-conico; prothorace oblongo-ovato, tertio apicali constricto, supra sulcato, rugoso-punctato, punctis squamosis; elytris prope suturam et lateribus foveolato-sulcatis, in disco subclathratis.

Long. 11 mill.

Hab. Sumatra occid. (Solok). — A single specimen captured by Mr. Vorstman at an elevation of 5000 feet, and presented to the collections of the Leyden Museum by Mr. W. Albarda.

Head broader than long, with the posterior angles prominent, rounded, the base is notched in the middle and at the sides; convex, furrowed and punctured above. Basal portion of the rostrum as long as the head, scaled, with three furrows, the median furrow is prolonged up to the base of the apical portion but it is narrower between the antennae; the apical portion is longer, subcylindrical, hardly broader at the apex. Antennae club-shaped, perforiate, the median joints are transverse, the 9th as long as broad with the sides hardly curved; the 10th joint is of the same shape as the preceding one but slightly shorter; the apical one is elongato-conical, a third longer than the preceding one.

Prothorax oblongo-ovate, a little constricted at the apical

third, enlarged and regularly rounded towards the middle, furrowed above, rugoso-punctate (except in the apical third), the punctures are scaled at the sides.

Elytra emarginate at the base, with the exterior angles rounded, almost parallel at the sides, narrower at the apical declivity, rounded at the apex; above along the suture and at the sides they are foveolato-sulcate, in the middle almost clathrate; the colour is shining black, except the apical declivity and the apex, a rounded spot behind the middle, a median line at the base, and the shoulders, which are rusty red.

Legs brown-red, the tibio-femoral articulation and the median portion of the femora darker. Body beneath black, shining; the rostrum, coxae, metasternum and the 3rd and 4th abdominal segments red-brown; head notched at the base, prosternum convex, the intercoxal process margined at the sides; metasternum punctured at the sides; slightly depressed in the middle, abdomen at the base almost convex, with some punctures at the sides; the apical segment is punctured.

This new species is remarkable by the posterior angles of the head being shaped as in some oriental species of *Trachelizus*, notwithstanding this abnormal character, the head is longer, the basal portion of the rostrum is parallel at the sides, the prothorax and the elytra are broader and shorter than in the species of *Trachelizus* (f. i. *T. insularis* Senna, *T. rufovittatus* Perr.). The male is unknown, but probably it has the head as long as broad and the rostrum shorter than in *Trachelizus*. *M. elegans* Senna and the following species, *M. trachelizoides* n., may be considered as transitional forms between the two genera.

Miolispa trachelizoides, n. sp.

♂. Elongata, robusta, nigra vel nigro-brunnea, singulo elytro vitta mediana plus minusve lata a basi usque ad medium vel ultra, fascia vel plaga ante declivitatem apicalem et apice rufo-ferrugineis, interdum apice rufo-brunneo; ca-

pite latiore quam longiore, angulis posticis rotundatis et prominulis, supra canaliculato, punctato; rostro basi brevi, trisulcato, sulcis interdum squamosis, parte antica conspicue longiore, lateribus profunde sulcata, supra punctulata, apicem versus modice ampliata; antennis brevibus, breviter clavatis; prothorace oblongo-ovato, supra sat crebre punctato, in medio sulcato; elytris usque ad declivitatem apicalem lateribus parallelis, deinde attenuatis, apice breviter marginatis, angulo externo rotundato, interno levissime prominulo; supra in disco subclathratis, lateribus foveato-sulcatis, sulco 1° indistincte punctato, vel impunctato, interstitiis irregulariter sparsimque punctulatis.

Long. 10—12 mill.

Hab. Sumatra. — Two males (cotypi), Leyden Museum and my own collection. — The specimen of the Leyden Museum has been captured by Mr. J. A. N. Schagen van Leeuwen in Deli.

This species is remarkable by the head of the male being broader than long, shaped almost as in some oriental species of *Trachelizus*, and by the apical portion of the rostrum which is distinctly longer than the basal one. In *M. elegans* Senna the hind angles of the head are prominent and rounded, this character is well visible in the new species, but it is combined with the shortness of the head, nevertheless I have no objection in describing it as a *Miolispa* with which genus it corresponds in general structure.

Head short, broader than long, enlarged at the base, the hind angles rounded and prominent, the base is emarginate in the middle, notched at the sides, sometimes scaled; above it is furrowed, almost bilobed, punctured. Basal portion of the rostrum nearly as long as the head, parallel at the sides, trisulcate, scaled or not, the median furrow is narrower between the antennae; apical portion longer than the head and basal portion together, almost cylindrical, moderately enlarged towards the apex, finely punctured above, deeply furrowed at the sides. Antennae short, hardly as long as the rostrum, club-shaped, with

Notes from the Leyden Museum, Vol. XVI.

the median joint broader than long, slightly obconical, the 9th and 10th larger, almost rounded, the apical joint shorter than the two preceding ones taken together, ovato-conical.

Prothorax ovate-oblong, nearly as long as the rostrum, rounded at the sides posteriorly, the base has a raised margin; furrowed above, irregularly punctured, the punctures and the furrow slightly scaled.

Elytra nearly as long as twice the prothorax and of the same width as that, slightly emarginate at the base with the external angles moderately callous, parallel at the sides, narrower at the apical declivity, the external angles of the apex rounded, the sutural angle very slightly prominent; subclathrate above, foveato-sulcate towards the lateral margin, the 1st furrow along the suture impunctate, the interstices finely punctured.

Legs moderately short, regular; body beneath chestnut or black, shining; rostrum keeled in the middle, furrowed and scaled at the sides of the keel; metasternum and abdomen very finely punctured, the punctures sometimes scaled, the metasternum is slightly impressed, the abdomen convex, the suture between the two basal segments is invisible in the middle.

Amorphocephalus sumatranus, n. sp.

♂. Sat elongatus et robustus, brunneo-fuscus, nitidus; capite brevi, transverso, valde excavato, oculis flavis; rostro basi itidem excavato, ad latera appendicibus semiglobosis, supra deplanatis leviterque impressis munito, postea erecto, rotundato, medio elevato, antice et postice impresso; parte apicali sublonga, primum angustata, deinde subrotundato-ampliata, in medio sulcata, marginibus sulci carinatis; antennis robustis, articulis perfoliatis, 4°—8° rectangularibus, latioribus quam longioribus, 9° et 10° majoribus, haud quadratis, apicali elongato, subcylindrico apiceque acuminato; prothorace medium versus modice ampliata, supra fere laevi, nitido; elytris sat elongatis, a medio

Notes from the Leyden Museum, Vol. XVI.

angustatis, apice singulatim rotundatis, in dorso sulcatis, impunctatis; sulco 2° pone medium haud tuberculatum, interstitiis modice elevatis; metasterno abdomineque basi impressis.

Long. 12 mill.

Hab. Sumatra. — A male collected by Dr. J. F. van Bemmelen.

Allied to *A. laevis* Power but easily distinguishable by the following characters: body more robust and deeper coloured; basal apophyses at the sides of the rostrum hemispherical, slightly oblique, with the flat surface subovate, hardly impressed; the median portion of the rostrum is regularly rounded but shorter, the apical part is longer, narrower at the base, less enlarged and less rounded anteriorly than in *A. laevis* Pow. The antennae are shorter but more robust, perfoliate, with the 3rd joint obconical, the 4th—8th rectangular, broader than long, the 9th and 10th a little longer than the preceding ones but not square, the apical joint is slightly shorter than the two preceding ones together; the median portion of the prothorax is more rapidly enlarged, thence the sides are less regularly curved; the apex of each elytron is rounded; the 2nd furrow is smooth.

Florence, December 1894.

NOTE XIX.

DESCRIPTION DE TROIS ESPÈCES D'ÉLATÉRIDES
NOUVEAUX DU MUSÉE DE LEYDE

PAR

E. CANDÈZE.

Campsosternus Hasselti, n. sp.

Viridis igneo-micans, subhebetatus, glaber; antennis nigris; prothorace trapeziformi, parum convexo, disco æquali, medio tantum punctato, linea obsoleta media, angulis posticis tumidis, haud carinatis; elytris brevibus, a basi attenuatis, punctato-substriatis, interstitiis rugulosis; subtus, cum pedibus, aurato-viridis. — Long. 26 mill., lat. 9 mill.

Hab. Sumatra occ.: Tapanoeli (A. L. van Hasselt). — Un seul exemplaire.

Cette espèce glabre, assez petite pour le genre, à pattes de couleur métallique, a de grands rapports avec le *C. Plutus* de Bornéo dont il a la forme trapézoïde du prothorax, ainsi que l'aspect un peu mat. Mais il en diffère par le manque d'impressions sur ce même prothorax, les angles postérieurs bombés mais non carénés.

L'exemplaire que j'ai sous les yeux est remarquable par un reflet rouge, qui ne paraît que dans certaines positions de l'insecte, comme chez le *C. flammeus*, mais qui est plutôt terne que brillant.

Megapenthes natunensis, n. sp.

Castaneus, haud nitidus, brevissime pubescentia sericea obductus; antennis fusco-nigris, basi rufescentibus; prothorace latitudine longiore, creberrime æqualiter punctato, angulis posticis longe unicarinatis; elytris punctato-striatis, intersti-

Notes from the Leyden Museum, Vol. XVI.

tiis convexis, rugulosis, brunneis, basi dilutioribus; epipleuris pedibusque flavis. — Long. 8 mill., lat. $2\frac{1}{3}$ mill.

Hab. Iles Natuna, dans le golfe de Chine (A. L. van Hasselt). — Un seul exemplaire.

Voisin du *M. saleyeri*¹⁾ (*agrioides* olim), presque de même couleur bien qu'un peu plus rougeâtre sur les élytres, qui sont en outre marquées à la base d'un point jaunâtre; les angles postérieurs du prothorax ne portent qu'une seule carène, mais qui est longue; la pubescence qui recouvre les élytres a un reflet grisâtre à la suture et au bord externe.

Melanotus diploconoides, n. sp.

Brunneo-castaneus, subdepressus, pubescens; antennis articulo tertio quarto multo minore; prothorace trapeziformi, latitudine haud longiore, parum convexo, punctato, medio linea impressa, angulis posticis longe carinatis, sulcis basilibus magnis; elytris punctato-striatis, striis basi fortiter impressis; subtus concolor. — Long. 11—16 mill., lat. $3-4\frac{1}{3}$ mill.

Hab. Sumatra occ. — L'exemplaire du Musée de Leyde (une femelle) provient du Mt. Loeboe Raja et a été offert au Musée par M. A. L. van Hasselt.

Voisin du *M. cuneolus* de Java; la pubescence toutefois de même couleur sur le prothorax et les élytres. La femelle a le maximum de la taille indiquée ci-dessus.

Glain-lez-Liége, Décembre 1894.

1) Notes Leyd. Mus. VII, 1885, p. 122.

NOTE XX.

ON BUBALUS MINDORENSIS HEUDE

BY

Dr. F. A. JENTINK.

December 1894.

(Plates 8, 9, 10 and 11).

The Dutch consul at Manilla, Mr. P. K. A. Meerkamp van Embden, presented to our Museum a male and a female specimen of the Mindoro-buffalo, both adult and with skeletons, besides a young individual. They have been shot at the foot of a mountain, called Halcon, in the vicinity of the Dulayan-river, Mindoro-island. This series, more complete than is to be seen in any other Museum, enables me to procure informations concerning this highly interesting animal, more extensive than has been done before.

The first description of the »Tamarao" — as the natives call it — has been given by le Père Heude ¹⁾ in the following terms: »On rencontre à Manille des crânes d'un petit buffle provenant de l'île de Mindoro. Le Musée de l'Université a un animal monté. C'est une miniature du buffle ordinaire. La couleur est la même; c'est le même pelage. *Les pieds sont blancs*, et l'on voit au bas du devant du cou le croissant ordinaire....

M. Sainz de Baranda, Directeur des Eaux et Forêts aux

1) Mémoires contenant l'Histoire naturelle de l'Empire chinois par des Pères de la Compagnie de Jésus. Chang-Hai.

Tome II, 1888, p. 50: Note sur le petit Buffle sauvage de l'île de Mindoro (Philippines).

Philippines, m'a procuré un superbe crâne de Buffle de Mindoro. Malheureusement la préparation lui a fait perdre les prémolaires supérieures: le maxillaire inférieur a ses rangées molaires intactes. La taille de cet animal est très réduite; mais son caractère spécifique le plus intéressant, et qui frappe les yeux les moins exercés, est le peu d'ouverture et la convergence finale des cornes. Elles sont d'un buffle pour tout le reste; j'entends d'un buffle sauvage. C'est le commencement de la série générique dont le grand Arni de l'Inde est la fin: un maximum et un minimum. Je propose de nommer cet animal *Bubalus mindorensis*.

Je ne puis accepter l'opinion de Gray (P. Z. S. 1878, p. 882) rapportée par M. Bartlett, qui la partage, que cet animal est une variété du buffle ordinaire."

This very specimen in the Dominican College of Santo Tomas has been examined in the same year 1888 by Prof. J. B. Steere. He called the animal "Tamaron" and saw that the head was that of a calf of the species and that the skin of a young Buffalo had been used for the remainder of the specimen, although he was not so certain of the latter ¹⁾. As he procured three full-grown individuals, he could give a more detailed description, as taken from the animals when first killed ²⁾.

The chief characteristics mentioned in Steere's description in P. Z. S. L. are the following: "a greyish-white stripe running from near the inner corner of the eye towards the base of the horn (this stripe three inches long by one inch wide), a greyish spot above each hoof on all feet and a greyish-white patch on inner side of lower fore leg. General colour of skin and hair black ³⁾. Several of the last vertebrae of the tail aborted."

Somewhat different sounds Steere's description of the same animals in his list of the year 1890, p. 29. We

1) P. Z. S. L. 1888, p. 414.

2) L. c. and Steere, a list of the birds and mammals collected by his expedition to the Philippines, 1890, p. 29.

3) I italicize.

are informed there: »that the adults (of the *Tamarou* ¹⁾) are lead black, with whitish markings upon the face, neck, legs and undersurface" ²⁾). As to the bony parts Mr. Steere remarked: »the chief sexual differences ²⁾) noted were the thicker neck and horns of the bull, the bases of the horns being also nearer together than in the female". He adds, »that a calf apparently of five or six months old is chestnut in color". It is evident that Mr. Steere merely has *seen* the mentioned calf, for his collection contained (P. Z. S. L. 1888, p. 414) only adult specimens and no calf viz.: an old bull—length from point of nose to tip of tail eight feet one inch; an old cow—length eight feet; a fullgrown young bull—length eight feet two inches.

Description of the old male and female of about the size of Mr. Steere's specimens: hair short, appressed and of a black color; innerside of lower part of the legs blackish brown; the hairs along the spine are somewhat longer and more closely set. The direction of the hairs on the back is a highly interesting one, viz.: the hairs of the anterior part are directed foreward, those of the middle backward and those of the posterior part successively foreward, downward and backward, resulting from whirls of hairs placed to the right one halfway between the shoulderblade and the haunch and one just before the haunch; to the left one above the shoulderblade, a smaller one between the shoulderblade and the haunch and a third one just before the haunch. The hairs along the spine are directed foreward till between the whirls before the haunches and from there backwards and continuous with the thinly spread hairs of the basal part of the tail. Above each hoof on all feet a large whitish patch, two on each leg. Outer side of ears black haired, long white hairs protrude from the innerside of the ears. At a distance behind the angle of

1) *Tamarou* as well as *Tamarou* is wrongly written, the native-name is *Tamarao*.

2) I italicize.

the mouth and perpendicular under the eye is to be seen in the male (absent in the female) a white patch with some elongated hairs; just between these patches, that is to say on the chin, lies another white patch, both in male and female. A rather broad whitish colored band runs from the shoulders towards the dew-lap; another much shorter and smaller one on the throat: these two bands are not developed in the female-specimen before me. The tail ends in a well developed tuft of black hairs.

Our specimens seem to be of somewhat the same size as Mr. Steere's animals, especially as his old male: the length of the horn of the male, measured along the curve, is 360 Mm., distance between the tops 275 Mm., in our old female 315 Mm. and 155 Mm.

Greatest length of ear 185 Mm., greatest width of ditto 125 Mm.

Mammae 4.

Description of the calf, a male, apparently a couple of months old: general color a fine chestnut; upperparts of head black; from between the black-haired ears runs a rather broad black stripe or band along the spine to the tail, which itself is black, except its underside of which the basal part is chestnut colored; the tail ends in a well developed tuft of long black hairs. Fore legs black, hind legs blackish brown; a slight trace of light spots above the hoofs. A narrow black stripe from hind legs towards the belly. The broad whitish stripe near the inner corner of each eye is as well developed as in the adult specimens; it is the only representative of light colored parts on the face: on the chin is a yellow brown colored patch occupying the place of the white ditto of the old specimens. A very diffuse trace of the lower of the two above mentioned bands. No trace of horns.

Description of the bony parts: the skull has been described and figured by Dr. B. Hoffmann¹⁾: this first known

1) Abhandlungen und Berichte des K. Zool. und Anthr. Ethn. Museums zu Dresden, 1887, p. 28, Tafel N^o. 3, figs. 6a bis f.

skull afterwards has been compared with the skull of Mr. Steere's N^o. 3, a fullgrown young bull, in Dr. Heller's »Inaugural-Dissertation''¹⁾; Dr. Heller adds a series of measurements of the different parts of the Dresden-Museum-skull, which apparently is that of an adult male-specimen as the measurements of the different bones agree very strikingly with those of our old-male-skull, which measurements differ so widely from those of the female-skull — as I will explain below — that it may be called impossible to confound them, and I am convinced that palaeontologists would regard the two sexes as two quite distinct species, if of the animal merely the skulls without horns were known.

Now a few words concerning the skeleton: there are 13 dorsal vertebrae with 13 ribs, on the top of each spinous process is a bony excrescence, diminishing in size towards the lumbar vertebrae, which latter are 6 in number: in the female-skeleton the first lumbar vertebra at the left bears a *movable* well developed rib (Plate 11), long 290 Mm., its broadest part measures 25 Mm. The sacral vertebrae are five in number. There are 18 or 19 caudal vertebrae, the last ones being deformed. Very different in form are also the three first caudal vertebrae in the male and the female.

The ribs are very broad, the broadest measuring fully 55 Mm.

The sternum is composed of 7 pieces — the last segment differently shaped in male and female —, ending in a xiphisternum in the shape of a sickle.

With respect to the frontal bones the horncoves are inclined backward, in the female more than in the male; the frontal bones are convex in the male, concave in the female; the nasals measure 144 Mm. in the male, 155 Mm. however in the female (Plates 8 and 9). In the male the bony palate ends in one line with the last molars, in the

1) l. c. 1889, p. 32.

female much more backward; the vomer in the female is of about double the size of that bone in the male and is much more prominent; the posterior palatine foramina are placed much more backward in the female than in the male (Plate 10). The coronoid processes are more curved in the female than in the male, and in the female the incisor-series is much more inclined forward. I recorded here a series of sexual differences, there are however still a great deal more which are as striking by comparing the skulls as it is difficult nay impracticable to describe with sufficient accuracy.

Considering the peculiar white markings the *Tamarao* reminds strongly the *Anoa*; it is as it were an enlarged edition of the *Anoa*, but the molars — as has been pointed out by Dr. B. Hoffmann — the broad ribs, the horns and the thinly spread coarse hairs remind the true *Buffalo*, so the size and some cranial peculiarities. As the *Buffalo*-characteristics are preponderant, I call it provisionally with Père Heude *Bubalus mindorensis*, although I confess that there is reason to the supposition that it perhaps once may be demonstrated to be merely a hybrid between *Bubalus bubalus* and *Anoa depressicornis*. This can be made out by cross-breeding and therefore is a problem to solve by Directors of Zoological Gardens and I recommend this most scientific inquiry very much to those gentlemen. If later on it appears that the *Tamarao* is not a hybrid, than I think it needs a new generic title, as it is neither a true *Buffalo* nor a true *Anoa*.

NOTE XXI.

ON TRICHYS FASCICULATA (SHAW)

BY

Dr. F. A. JENTINK.

December 1894.

Linnaeus bestowed the name *Hystrix macroura* on a Porcupine, described and figured by Seba in 1734. Seba remarked: »La queue est la partie la plus admirable de cet animal; elle est d'une grande longueur, diminuant insensiblement, hérissée de poils piquans, et finissant en épi d'une façon toute particulière; car ses poils paroissent composés de *noeuds* ¹⁾ d'une manière très-artificieuse; d'abord on voit un poil délié que reçoit un autre poil plus long et plus gros, à peu près comme sont arrangées *les graines de Ris enfermées dans leurs capsules* ¹⁾. Chacun d'eux n'est pas de la même longueur, ni de la même grosseur, mais joints ensemble ils forment un faisceau transparent, et qui jette un éclat qu'on peut nommer argenté". Seba figured the specimen belonging to Mr. Vincent's Cabinet at Haarlem besides a tail from his own collection.

Buffon described and figured in his *Histoire naturelle* a quite different species, under the name *le porc-épic de Malacca*, called *Hystrix fasciculata* by Shaw in his well-known *General Zoology*: Buffon saw the animal living in the house of Mr. Aubry, St. Louis' priest, and gave its figure; afterwards he saw another living specimen at Paris

1) I italicize.

in 1777; he said that the species was characterized »sur-tout par la forme et la longueur de la queue; elle est terminée par un bouquet de poils longs et plats, ou plutôt de petits lanières blanches semblables à des rognures de parchemin".¹⁾

Both species are from the Indian Continent and the E. I. Archipelago. A third long tailed tufted Porcupine lives in Africa; the latter, called *africana* by Gray, has the tail like *macroura*, viz.: »with a tuft of quills, consisting each of a long slender stem, swelling out at intervals into knots resembling grains of rice".

When studying the tail of the three species by the aid of a lens, we find that the short spiny hairs with which it is covered present the following peculiarities:

in *macroura* each stout spiny hair is flanked by two longer less spiny hairs or bristles;

in *africana* each long spiny hair is flanked by two much shorter spiny hairs or bristles; in both species therefore the number of the hairs is equal to three times the number of scales²⁾, as is generally to be found on the tails of the other Rodents, with a few exceptions³⁾;

in *fasciculata*, however, there is only one rather short spiny hair protruding from the top of each rhombic scale (one of the few exceptions from the just now mentioned rule).

It may be observed, that the skull of *africana* agrees much more with that part of *macroura* than of *fasciculata*: so that considering all these differences we are inclined to bring the three species under two heads, viz.: *macroura* together with *africana*, and the very different *fasciculata* in a separate genus.

Cuvier was the first author, who separated the long-tailed old-world-Porcupine from the short-tailed *Hystrix*-

1) I italicize.

2) See my paper on *Mus Armandvillei* in Max Weber's Zool. Ergebn. Bd. III, Heft 1, 1893, p. 81.

3) See J. C. H. de Meijere. Ueber die Haare der Säugethiere. Morph. Jahrbuch. Bd. XXI, 1894, Heft 3.

species and called the group »*les Atherures*''; his type was *macroura* Linné and not *fasciculata* Linné as Cuvier erroneously wrote (*fasciculata* being a specific-name given by Shaw), and as appears from the description of his type, viz.: »la queue terminée par un faisceau de lanières cornées applaties et étranglées d'espace en espace''. Cuvier moreover confounded Buffon's figure with that of Seba (see Règne animal, 1829, I, p. 215, note). If we accept Cuvier's generic-title, *Atherura*, then the two species with »la queue terminée par un faisceau de lanières cornées applaties et étranglées d'espace en espace'' belong to it, viz: *macroura* Linné and *africana* Gray, meanwhile *fasciculata* Shaw ought to bear another generic-title.

Dr. Günther described P. Z. S. L. 1876 a Porcupine from West-Borneo under the name *Trichys lipura* (Mr. Oldfield Thomas proposed in 1889 the name *Güntheri*), agreeing exactly with three specimens from Malacca, collected by the late Diard and since in the Leyden Museum, besides one specimen collected by Büttikofer at the foot of Mount Kenepai, 20 November 1893: Waterhouse having studied these three Malaccan specimens, brought them under the head *fasciculata* Shaw, and Dr. Günther having examined one of them said that they are identical with his *Trichys*-specimens. The reason why Dr. Günther could not accept the identity of his *lipura* with *fasciculata* Shaw we find in P. Z. S. L. 1889, p. 76, viz.: »*fasciculata* of Buffon and Shaw is a Porcupine with long ¹⁾ spines of a different coloration and with a thick ¹⁾ bundle of terminal quills at the end of the tail and, probably ¹⁾, identical with *macroura*''.

Buffon's figure, however, of *le porc-épic de Malacca* is as badly drawn as Buffon's other figures, f. i. those of *l'Aye l'aye de Madagascar*, of *le Loris de Bengale* and others and so in looking at the plates we should always compare what he says in the descriptions. And in the description of *le Porc-épic de Malacca* there is no word about long

1) I italicize.

spines on the back of the animal; Buffon wrote: »tout le dessous du corps est blanc, les flancs et le dessus du corps sont hérissés de piquans, moins longs que ceux du porc-épic d'Italie, mais d'une forme toute particulière, étant un peu aplatis et sillonnés sur leur longueur d'une raie en gouttière''. This description agrees with Dr. Günther's and exactly with what we see in our four specimens. As to the *thick bundle of terminal quills at the end of the tail*, I confess that Buffon's figure is less correct than his description, which runs as follows: »la queue est terminée par un bouquet de poils longs et plats, ou plutôt de petites lanières blanches semblables à des rognures de parchemin''. Exactly Dr. Günther's description, P. Z. S. L. 1889, p. 76, where he says that the tail ends in a thin bundle, meanwhile Buffon said in *his description* no word about a *thick* bundle. So that it is clear that *lipura* Günther (*Güntheri* Thomas) is *fasciculata* Shaw (Buffon's Porc-épic de Malacca). I demonstrated above that *fasciculata* needed a new generic title, and I think it to be en règle to accept Dr. Günther's generic name *Trichys* and to call the species *Trichys fasciculata* (Shaw).

To what conclusions we come when laying too much strength upon figures in old books without consulting and comparing the descriptions, may be illustrated by the most striking fact, that Seba's figure of *Porcus aculeatus sylvestris* shows short quills on back and flanks, meanwhile in reality on the back of *macroura* there are several very long quills and bristles; without more données we therefore should not have good reason to trust the identity of Seba's figure with *macroura* L. Dr. Günther nevertheless did not hesitate to accept the name *macroura* L. for Seba's animal in spite of Seba's incorrect figure. And Dr. Günther was quite right in doing so, for in Seba's figure the tail is the main point, the rest is secondary thing. And so it is too with Buffon's figure of *le Porc-épic de Malacca* (*fasciculata* Shaw).

Observation. That there is a distinct relation between

Notes from the Leyden Museum, Vol. XVI.

scales and hairs, resp. quills, and that the latter are not disorderly implanted between the scales and upon the skin, has been pointed out by Prof. Max Weber, Dr. de Meijere and myself, and therefore it is evident that we pay continually attention to that highly important matter.

Here in *T. fasciculata* I settle the following interesting fact. The quills are placed upon the body in very regularly arranged groups, like in other Porcupines; in separate groups on parallel rows like the hairs on the scaly tails of most Rodents and other Mammals; the longest quill always in the middle, the other ones right and left diminishing regularly in length; the whole arrangement makes the impression *as if they are placed along the margin of scales*, like it is the case with the hairs of the rat's tail. And looking at the inside of the skin we see to our great astonishment and surprise, *that they do indeed*, for the whole inside shows *models*¹⁾ *of scales regularly arranged in parallel rows exactly like the squills upon the reverse of the skin!*

It is a remarkable fact that the more the skins of Mammals are examined, the more it appears that there are everywhere vestiges of scales where formerly nobody thought of. This inquiry not being closed for several years, it however is very seductive to a speculative mind to conclude that it is very likely that the ancestors of our Mammals in prehistoric times were clad with scales and not with hairs or quills. And that this hypothesis would not be too hazardous follows from the fact that it is supported by what we know about the teguments of numbers of fossils, found in very old strata. It is however a great puzzle to me to understand why or how those gigantic well armed and strongly clad animals have vanished and yielded their place in favour of the rather small, less armed and badly clad specimens of the creation of now a day!

1) Cf. what I remarked concerning the tabulated skin of hands and feet of *Mus Armandvillei*; Weber's Zool. Ergebn. Bd. III, Heft I, 1893, p. 81 (bottom).

NOTE XXII.

ON A SPECIMEN OF
HERPESTES SEMITORQUATUS GRAY
FROM SUMATRA

BY

Dr. F. A. JENTINK.

December 1894.

In the year 1883 the Museum procured some animals from Soekadana, collected by Mr. J. C. van Hasselt. Among them was a specimen of the rare *Herpestes semitorquatus*, recorded in the Catalogue du Muséum d'Histoire naturelle, T. XI, p. 125.

Gray's type-specimen (Ann. Mag. Nat. Hist. 1846, p. 211) being sent by Lowe from Borneo, I was convinced that my specimen too came from Borneo: Soekadana lies in Southwestern-Borneo. There is, however, an other locality called Soekadana and lying in the Lampongs, Southern Sumatra. And now I discover by an accident that Mr. v. Hasselt in 1883 dwelled in Soekadana, Southern-Sumatra, so that our specimen of *H. semitorquatus* is from the latter locality and *not* from Borneo. Sumatra therefore — and that is the reason why I publish this observation — is a new locality for that species.

It is a very important fact, that *Herpestes brachyurus* and *H. semitorquatus* are living in Sumatra as well as in Borneo.

NOTE XXIII.

THALASSOCHELYS CARETTA ON THE DUTCH COAST

BY

Dr. Th. W. VAN LIDTH DE JEUDE.

In the end of December 1894 a living specimen of *Thalassochelys caretta* L. was captured near the village of Oud-dorp on the island of Overflakkee. Though this species is an inhabitant of the tropical and subtropical seas, living also in the Mediterranean, it is an accidental visitor of the North.

Mr. Edm. de Selys-Longchamps, speaking about *Chelonia caretta*, mentions: »Elle a été pêchée deux fois à Blankenberg sur la côte de Flandre, mais elle ne s'y trouve que très-accidentellement" ¹⁾. Fuller information as to the date of capture, or the sex and the dimensions of the captured animals is wanting. According to P. J. van Beneden two Chelonidae were captured in November and May 1859 by fishermen of Ostende ²⁾.

On the first of August 1861 a Loggerhead Turtle (*Chelonia caretta*) was caught at Pennau, near Banff, by fishermen in a stake net and was recorded to have been very lively and pugnacious. This specimen had a weight of 25 lbs, whilst its shield measured 19½ by 18 inches. Another specimen, 11½ inches long and 10 inches broad, was caught in August 1861 in fresh water, viz. in Loch Lomond, as recorded by Mr. A. D. Smee in a letter to Dr. J. E. Gray ³⁾.

In 1707 in our country also a *Chelonia* of about 6 feet long was captured in fresh water, in the Wijkermeer near the village of Beverwijk, as is recorded in the »Kronyk" of the town of Medemblik. In this case we are not sure as to the species the marine turtle belonged to, nor have we any certainty about the species of a very large specimen captured on 17 August 1777 near the island of Walcheren.

1) E. de Selys Longchamps, Faune Belge, 1re Partie. Liège, 1842.

2) Bulletins de l'Académie royale de Belgique. 4e Série, T. VI, p. 71.

3) Annals and Magazine of Natural History, 3rd Ser. Vol. 8, p. 351.

Mr. J. van Iperen who mentions these facts ¹⁾ thinks it improbable that these turtles were washed off the deck of a ship, as he takes them to be too large to be transported.

As far as I know of, the statements of these captures in 1707 and 1777 are the only ones in which the presence of a marine turtle on our coast was recorded.

The question whether Chelonidae captured on the English, Belgian or Dutch coasts must be regarded as accidental visitors, or whether their appearance is due to the influence of traders who transported them from their original habitat to some market or some zoological garden, is a question not so easily solved. Dr. de Man in Middelburg kindly informs me, that in 1889 he got possession of two specimens of a number of three Chelonidae, cast on shore in our province of Zeeland, one of them still living when it was captured. After many accurate informations Dr. de Man discovered that, not long before that time, from a ship that brought animals from America to the zoological garden at Antwerp, three marine turtles, being nearly dead, were thrown overboard. On the other hand, a specimen of *Pelamys sarda* C. & V., captured in June 1878 near Bergen op Zoom, and sent to the Leyden Museum by Mr. C. J. Bottemanne ²⁾, is an example of a species, which, though living in the Atlantic and the Mediterranean, accidentally visits our Northern seas.

Our specimen of *Thalassochelys caretta* L. measured 98 cm. by 77 cm. along and across its shield and had a weight of 280 kilo's. It was a female and contained no less than 1150 eggs in a far advanced stage of development, the largest of them weighing 17,5 gr., the smallest 11 gr., and measuring respectively 3,5 cm. and 2,5 cm. It is more than probable that all these eggs would have been laid during the very next period of egg-laying of our turtle, an interesting fact with regard to the fertility of these animals.

The skeleton of our specimen will be preserved in the collections of the Leyden Museum.

1) Verhandeligen van het Zeeuwsch Genootschap, T. VI, p. 620.

2) Tijdschrift der Ned. Dierk. Vereeniging, Deel IV, 1879, Verslagen p. 8.

NOTE XXIV.

DESCRIPTIONS OF SOME NEW BRENTHIDAE

BY

Dr. ANGELO SENNA,

Assistant in the R. Museum, Florence.

Among the large series of Brenthids with which Dr. K. Jordan of the Hon. W. Rothschild's Museum at Tring kindly entrusted me for examination, I found several species of *Rhaphidorrhynchus* Schoenh. recently described by me from the collection of the Brussels Museum and my own, and two species which I believe to be new to science. But special mention may be made of a new Arrhenodinae-genus which I propose to call *Phymechus*.

Ubanus and *Tmetogonus* are two new genera of the same subfamily, of which I have added here the description: all may be considered as representative forms of the oriental group *Orychodi* in neotropical regions.

Rhaphidorrhynchus sexvittatus Senna.
(Ann. Soc. Ent. Belg. Tom. XXXVIII, p. 596, 1894).

A male from Panama and a female from Nicaragua.

The female has a length of 14 mill., and it differs moreover from the type in my collection by its colour being more reddish, by the eyes being more prominent, and by the punctuation of the elytral furrows which is more regular. The 3rd interstice has also a short ferruginous line on its apical third.

Notes from the Leyden Museum, Vol. XVI.

Rhaphidorrhynchus vicinus Senna.
(l. c. p. 599).

Several males and females from Petropolis (Brazil).

In some specimens the prothorax is very slightly bronze or has the median portion darker than the sides and the apical third. The rostrum is sometimes as long as the prothorax; the anterior portion is slightly toothed at the sides, the front without impression, the 2nd joint of the antennae nearly as long as the 3rd. The striae are slightly undulate in the basal third and without punctures also at the sides. The coloured lines on the interstices are moderately variable in length, but the position is the same in all the specimens. The basal spot of the 4th interstice is sometimes united with the line of the basal third. The length varies between 11—17 mill.

Rhaphidorrhynchus longimanus Lund.
(Skrivt. af naturhist. selskab. Bd. 5, h. 2, p. 86).

Among the numerous specimens from Brazil, I mention a male which has the four ferruginous lines of the 2nd interstice united.

Rhaphidorrhynchus Rothschildi, n. sp.

♂. Niger vel aeneo-niger, nitidus, elytris rubro- vel flavo-ferrugineo lineatis; capite leviter latiore quam longiore, angulis posticis rotundatis, supra convexo, fronte obsolete canaliculata, oculis sat prominentibus; rostri parte basali capite parum longiore, ante antennis sensim attenuata, supra profunde sulcata, ad antennarum insertionem rotundato-ampliata, incrassata, utrinque tuberculata, parte apicali longiore, quadrangulata, e medio usque ad apicem sensim ampliata, marginibus elevato-dentatis, lateribus et supra prope apicem aspera; antennis elongatis, filiformibus, scapo scabriusculo, recurvo, infra apice dentato, articulis 2° et 3° scabriusculis, illo distincte brevioribus, sequentibus

Notes from the Leyden Museum, Vol. XVI.

cylindricis et pubescentibus; prothorace circiter rostri longitudine, elongato-conico, lateribus modice ampliatis, postice fortiter constricto, basi transverse bistrigoso, supra convexo, laevi; elytris elongatis, basi leviter emarginatis, humeris rotundatis leviterque callosis, lateribus perparce latioribus quam basi, apici subtruncatis, angulis externis oblique dentatis; supra vix convexis, juxta suturam 4-striatis, fere impunctatis, externe seriebus nonnullis punctorum versus apicem in sulcos transeuntibus exaratis, prope marginem lateralem iterum striatis; interstitiis dorsalibus latis, depressis, singulo elytro lineis punctisque 6—7 rubro-ferrugineo ornato; metasterno convexo, abdomine basi obsolete impresso, tibiis anticis intus parum dilatatis, metatarso anteriore articulo sequente parce longiore.

♀. Differt: capite brevior et latior, fronte laevi, rostri parte basali brevior, breviter sulcata, parte apicali cylindrica, laevi; antennis brevioribus, scapo minus recurvo, brevior, infra inermi, articulis duobus sequentibus laevibus; prothorace minus elongato et latior, elytris longioribus, pedibus brevioribus, abdomine basi convexo.

Long. ♂ 18, ♀ 16 mill.

Hab. Nicaragua.

The 2nd interstice has a line which occupies the basal half, another shorter one behind the middle, a third near the apex, the two latter are united in the female; the 6th interstice has a short line behind the middle, the 8th a line in the basal third and another shorter one at the apical declivity. Body beneath bronzy black, brighter in the female. The male has the rostrum beneath scabrous and keeled in the middle, the apex is smooth as the head and rostrum of the female.

This species may be placed near *R. longimanus* Lund, but differs from it by the apical portion of the rostrum being scabrous and enlarged at the apex, by the prothorax being narrower at the sides than the elytra at the base, and chiefly by the scape of the antennae which is curved, and toothed behind at the apex.

Notes from the Leyden Museum, Vol. XVI.

This new species is respectfully dedicated to Lord Walter Rothschild.

Rhaphidorrhynchus politus Senna.
(Ann. Soc. Ent. Belg. Tom. XXXVIII, p. 605, 1894).

A male and a female from Mexico.

The male has a length of 13 mill., the female not more than 9 mill. The female sex, hitherto undescribed, differs by the head being shorter and provided with a feeble impression on the front, by the basal portion of the rostrum being shorter than the head and obsoletely furrowed, by the anterior portion being cylindrical and smooth. The antennae have the joints shorter, the prothorax is broader anteriorly and shorter. In the specimen before me the two short lines of the 2nd interstice behind the middle are united.

Rhaphidorrhynchus variabilis Senna.
(l. c. p. 606).

A male from Mexico.

Rhaphidorrhynchus linearis Senna.
(l. c. p. 607).

I refer to this species a female from Mexico. Its body is robust; the head is short, with a shallow impression between the eyes, and the posterior angles are indistinct. The basal portion of the rostrum is as long as the head, furrowed, the anterior portion is elongate, filiform, smooth; the 2nd joint of the antennae is shorter than the 3rd; the prothorax is broader than in the male; the external angles at the apex of the elytra are slightly prominent, not toothed. The disposition of the ferruginous lines is as in the male, the colour is bronzy brown. In regard to the length (17 mill.) and robustness this specimen resembles *R. mexicanus* Senna, but the above mentioned characteristics

Notes from the Leyden Museum, Vol. XVI.

indicate undoubtedly *R. linearis* Senna. If we compare this female with that of *R. panamensis* Senna, the differences are the following: the head is broader, with the external angles of the base less distinct, the antennae are longer and have the 2nd joint also longer, the elytra are not spinous at the apex, the 2nd interstice along the suture is more raised, and not depressed at the base, the 3rd narrower; the disposition of the coloured lines is also different.

Rhaphidorrhynchus mexicanus Senna.
(l. c. p. 608).

A male from Mexico, with a very shallow impression on the vertex. — Length 17 mill.

Rhaphidorrhynchus consanguineus, n. sp.

♂. Capite, prothorace, rostri parte basali aeneis, laevigatis; rostri parte antica, antennis, interdum etiam capite et prothorace nigris; elytris et pedibus nitidis, brunneo-aeneis vel brunneo saturato leviter aeneo, corpore infra aeneo, nitido; capite quadrato, angulis posticis rotundatis, supra convexo, fronte plerumque distincte- raro obsolete canaliculata, oculis modice prominentibus; rostro basi capite vix longiore, lateribus subparallelis, supra sulcato, ad antennarum insertionem rotundato-ampliato, elevato, tuberculato; parte antica longiore, quadrangulari, marginibus elevato-dentatis, apicem versus leviter ampliata, scabriuscula; antennis elongatis, articulis 1°—3° leviter scabris, 2° minime brevior quam 3°, cæteris cylindricis, apicali acuminato; prothorace elongato-conico, lævi, parum nitido; elytris basi emarginatis, humeris rotundatis modiceque callosis, lateribus leviter curvatis, e tertio basali gradatim attenuatis, apice subtruncatis, in medio breviter emarginatis, angulo externo retrorsum spinoso; supra modice convexis, juxta suturam anguste sulcatis, sulco 1° impunctato usque ad declivitatem apicalem, interstitio 1° angusto; externe

Notes from the Leyden Museum, Vol. XVI.

striato-fortiter punctatis, prope marginem lateralem et tertium apicale punctato-sulcatis, singulo elytro lineis 6—8 punctis 2 ferrugineis notato; metasterno apici subfoveolato, abdomine basi convexo, laevi; metatarso antico fere dimidio longiore articulo sequente.

♀. Differt: capite brevior et latior, fronte foveolata, rostro basi brevior, parte antica filiformi, laevi; antennis brevibus, articulis basalibus laevibus, prothorace paullo brevior, elytris latioribus, pedibus brevioribus.

Long. ♂ 13—18, ♀ $12\frac{1}{2}$ —18 mill.

Hab. Venezuela (Merida).

The 2nd interstice has a spot at the base, a line behind the middle and another shorter one at the apical declivity: these two lines are sometimes united, rarely a very short line is seen towards the middle of this interstice where it is narrower than at the basal and apical third. The 3rd interstice is broad, convex, yellow-ferruginous till the middle, thence narrower and without coloured lines; the 4th interstice has a basal spot and sometimes a short line or a spot behind the middle, as on the 6th interstice; and finally there is, near the lateral margin, a long line in the basal half and another shorter one at the apical declivity.

This species is very closely allied to and intermediate between *R. linearis* Senna, *R. mexicanus* Senna and *R. panamensis* Senna, but as in the 26 specimens examined I have not seen any transitional form, I consider it as distinct. From *R. linearis* Senna this new species differs by the 2nd joint of the antennae being slightly longer, by the 2nd interstice of the elytra being narrower than the 3rd, and by the apex which is spinous externally; the anterior metatarsus is shorter and the disposition of the ferruginous lines on the elytra is different. If I compare a female of *R. consanguineus* with a specimen of the same sex of *R. linearis*, the differential characteristics are the following: the head is narrower, with the basal angles less distinct, the elytra are spinous at the external angles of the apex, the 2nd and 3rd interstices and the disposition of the coloured lines

are different. From *R. mexicanus* Senna, the new species is distinguishable by the head which is slightly narrower and channelled on the front, by the 2nd joint of the antennae which is longer, hardly shorter than the 3rd, whilst in *R. mexicanus* it is distinctly shorter than the 3rd; by the rostrum which is less rounded at the sides of the tip, by the 2nd interstice which is narrower towards the middle, and by the 3rd being broader in the basal half; the disposition of the ferruginous lines is also different, the head and basal portion of the rostrum beneath are more scabrous and without punctures, the 2nd joint of the anterior tarsi is longer.

As hitherto the male of *R. panamensis* Senna is unknown to me, I have compared the female of it with the female of *R. consanguineus*, and this latter differs chiefly by the 1st and 2nd interstices which are narrower and less depressed, and by the 3rd being broader. The disposition of the coloured lines on the elytra is the same in the two species, but the teguments are more brilliant in the first.

Rhaphidorrhynchus panamensis Senna
(l. c. p. 609).

A female from Nicaragua.

The body is moderately slender, but the character of the elytral interstices is well evident and identical with the type.

Phymechus, n. g.
(ψύμα = tuber, ἔχω = habeo).

Caput breve, supra rugosum, irregulare, in medio rude impressum, utrinque crasse auriculatum, auriculis retrorsum prolatis, obtusis, et super oculos, a latere visis, in carinam prolongatis. Rostrum modice elongatum, capite angustius, parte basali gradatim attenuata usque ad antennis, supra rude sulcata, parte apicali longiore, subqua-

Notes from the Leyden Museum, Vol. XVI.

drangulari, marginibus denticulatis, apice subangulatim modiceque dilatata, antice in medio profunde emarginata; mandibulis parvis. Antennarum articulis fere ut in genere *Cyriodonto* Kirsch. Prothorax elongato-conicus, supra sublaevis. Elytra apici anguste subtruncata, supra juxta suturam striata, lateribus punctato-sulcata. Pedes validi, femoribus intermediis et posticis tertio apicali dentatis, anterioribus ante medium longe dentatis deinde subarcuatis; tibiis medianis et posticis inermibus, anticis valde curvatis, apice leviter, ante apicem intus longe dentatis; tarsis brevibus, depressis, articulo 3° profunde diviso, articulo unguifero elongato, subgracili. Abdomen basi late excavatum.

Body elongate as in the genus *Orychodes* Pasc., but the base of the rostrum is without apophyses, the apex is not so enlarged, but similar to that of *Cyriodontus* Kirsch, the head is very different, the elytra striate along the suture and punctato-sulcate at the sides; legs similar to those of *Orychodes*, except the anterior thighs which are curved towards the apex and toothed before the middle. From *Cyriodontus* Kirsch, to which the new genus is allied by the apical portion of the rostrum and other characteristics, it differs by the body being more elongate, by the different sculpture of the elytra, by the head which is broader and has the posterior angles produced, by the prothorax being unarmed anteriorly; the anterior tibiae and the apical portion of the thighs are curved, the thighs have the tooth before the middle.

Phymechus Jordani, n. sp.

Rubro-castaneus, parum nitidus, elytris lineis ferrugineis ornatis; capite latiore quam longiore, parum convexo, rugoso, in medio rude impresso, et postice subtuberculato, basi arcuato, ad latera crasse auriculato; rostri parte basali capite longiore, sulcata, marginibus sulci crassis, irregularibus; inter antennis ampliato et incrassato, sulco angustiore, parte antica praecedente longiore, quadrangulari,

Notes from the Leyden Museum, Vol. XVI.

marginibus elevato-dentatis, supra scabra, apici subangulatim ampliata; antennarum scapo clavato, robusto, articulo 2° quam sequente brevior et basi valde angustato, 3° subobconico, sequentibus subcylindricis, gradatim longioribus, apicali elongato-acuminato, duobus praecedentibus simul sumptis brevior; prothorace elongato-conico, supra modice convexo, in medio obsoletissime canaliculato; elytris dimidio prothoracis longioribus, ejusque latitudine, basi emarginatis, angulis externis rotundatis minimeque callosis, lateribus in medio subparallelis, deinde angustatis, apice subtruncato; dorso subdepressis, juxta suturam striatis, striis 1^a et 2^a impunctatis, lateribus punctato-sulcatis; interstitiis dorsalibus latis, inaequalibus, parum elevatis, haud rectis, interstitio 2° latiore quam 1° et 3°; singulo elytro lineis ferrugineis 4 ornato. — Long. 20 mill.

Hab. Mexico (Oaxaca).

A male in Rothschild's Museum at Tring.

The 2nd interstice near the suture is ferruginous in the apical half, the 3rd is of the same colour in the basal half; two short lines are also visible before the middle on the 7th and 8th interstices. Body beneath chestnut; the head and basal portion of the rostrum are provided with two convergent lines of deep punctures; the rostrum between the antennae is keeled in the middle. The anterior coxae are separated, the intercoxal process is broad, the base of the abdomen broadly excavated, the apical segment punctured and slightly impressed in the middle and at the sides.

Urbanus, n. g.

Caput transversum, basi subangulatim emarginatum, supra fronte foveolata, postice parum elevatum, utrinque subauriculatum, auriculis pone oculos, a latere visis, obtusis, desuper visis dentatis; oculi sat magni. Rostrum elongatum, parte basali porrecta, dorso sulcata, lateribus oblique declivi; parte antica praecedente vix longiore, angustiore,

Notes from the Leyden Museum, Vol. XVI.

apici subangulatim ampliato, antice subrotundato et in medio emarginato. Mandibulae parvae. Antennarum articuli mediani subobconici, sequentes subcylindrici. Prothorax elongatus, antice attenuatus, deinde gradatim rotundato-amplius, supra convexus, laevis. Elytra elongata, lateribus parallelis, tertio apicali angustata, apici truncata; juxta suturam profunde unistriata, externe striato-punctulata, tertio apicali et prope marginem lateralem punctulato-striata. Pedes validi, femoribus anterioribus medium versus fortiter- medianis et posticis prope apicem levius dentatis, tibiis anticis curvatis, pone medium longe dentatis, tibiis intermediis et posticis inermibus; tarsis brevibus.

Body elongate as in *Episphales* Kirsch but more robust and well distinguished from this genus by the head being transverse and auriculate, whilst in *Episphales* it is longer than broad, narrower anteriorly than at the base which is simply emarginate. The basal portion of the rostrum in *Ubanus* is longer than in *Episphales*, the apical portion is differently enlarged at the tip; the prothorax is more elongate and broader at the apex; the sculpture of the elytra is as in some *Rhaphidorrhynchus* (f. i. *R. longimanus* Lund), but they are not spinous at the external angles of the apex; the legs are more robust than in *Episphales*, with the anterior thighs spinous towards the middle, the tibiae distinctly curved and strongly spinous in the apical third; the tarsi are also shorter.

From *Phymechus* Senna, the genus *Ubanus* differs by the body being more elongate, by the head being not rugose and differently auriculate, by the rostrum being not scabrous and not toothed at the margins of the anterior portion, by the elytra which are more elongate and differently sculptured; the anterior thighs are also not curved and spinous towards the middle.

Ubanus aeneus, n. sp.

♂. Elongatus, robustus, aeneus vel niger, nitidus, elytris ferrugineo-lineatis; capite impunctato, pone oculos,

Notes from the Leyden Museum, Vol. XVI.

desuper viso, dentato, fronte late foveolata, rostro basi capitis duplo longiore, supra parum distincte sulcato, lateribus rude rareque punctato, inter antennis vix ampliato; parte antica precedenti paullo longiore et angustiore, haud sulcata, sublaevi; capite infra et rostro usque ad antennis fortiter punctatis, punctis utrinque lineatim dispositis; antennis capite cum rostro longioribus, articulis medianis sub-obconicis, apice incrassato, sequentibus subcylindricis, apicali elongato-acuminato, duobus praecedentibus unitis brevioribus; prothorace elongato, basi transverse bistrigoso, dorso laevi, nitido, convexo; elytris dimidio prothoracis longioribus ejusque latitudine, basi subtruncatis, humeris rotundatis, lateribus subparallelis, tertio apicali angustatis, apici truncatis, in dorso sat convexis, juxta suturam profunde unistriatis, stria impunctata, in tertio apicali et prope marginem lateralem punctulato-striatis, disco striato-punctulatis, singulo elytro lineis 7—9 ferrugineis ornato; coxis anticis remotis, metasterno abdomineque basi convexis, laevibus.

♀. Crassa valdeque robusta; capite brevioribus et latioribus, fronte foveolata vel sulcata, rostri parte basali valde brevioribus, gradatim antice angustata, supra sulcata, sulco interdum super frontem adscendente; parte antica longioribus, cylindrica; antennis brevioribus et robustioribus, articulis medianis obconicis, 9° et 10° quadratis, prothorace brevioribus, ovato-conico, lateribus valde ampliato, elytrorum apice subrotundato, pedibus ut in mare sed robustioribus.

Long. corp. ♂ 26, ♀ 32—34 mill., prothor. ♂ 7, ♀ 8½—9 mill., latit. max. prothor. ♂ 4½, ♀ 6—6½ mill.

Hab. Mexico, Chiriqui.

The 2nd interstice along the suture has four ferruginous lines, but sometimes these lines are more or less united; the 3rd interstice has a short line before the middle, this line sometimes is wanting; on the 4th interstice there is a more or less elongate line on the basal half and another shorter one behind the middle, the 6th has a line which is longer than the preceding one, the 8th interstice has a line at or before the middle.

Notes from the Leyden Museum, Vol. XVI.

A male in the collection of the Brussels Museum, without indication of the locality, a female from Mexico in the Tring Museum, another female from Chiriqui in my own collection.

The male was labelled by Mr. Power „*Episphales?* subgenus? *aeneus* Pow. in litt.” and I think *Episphales Lacordairei* Pow.¹⁾ from Mexico, and probably also *Episphales interruptolineatus* (Gylh.)²⁾, may be referred to the genus *Ubanus*. According to Power’s description *E. Lacordairei* Pow. has: „capite quadrato, supra duabus retro prolatis cristis propeque oculos duobus dentibus retortis”. . . . and” anterioribus tibiis arcuatis, dente armatis” whilst in the genus *Episphales* the head and the anterior tibiae are otherwise shaped, as we see in *E. pictus* Kirsch.

Tmetogonus, n. g.

(τμητὸς = caesus, γῶνος = angulus).

Caput latius quam longius, subtriangulare, basi subtruncatum, supra convexum, fronte sulcata, angulis posticis latis, extus productis, truncatis. Rostrum modice elongatum, subgracile, parte basali sulcata, inter antennis parum dilatata et incrassata, parte antica longiore, marginibus erosocarinatis, apicem versus paullo ampliata. Antennarum articuli ut in genere *Pseudorychode* Senna. Prothorax oblongo-ovatus, basi transverse bistrigosus, supra convexus, laevis. Elytra juxta suturam striata, externe sulcato-punctata. Femora clavata, anteriora in medio fortiter-intermedia et postica in tertio apicali levius dentata; tibiae anticae valde curvatae, in tertio apicali infra et apici externe spinosae, tibiae medianae et posticae subrectae, inermes; tarsi breves, depressi, articulo 3° profunde diviso, articulo unguifero elongato, subgracili.

This new neotropical genus is allied to the oriental

1) Petites Nouvelles Entomologiques, II, p. 241, 1er juillet 1878.

2) Schoenherr, Genera Curc., V, p. 477 (sub: *Arrhenodes*), 1840.

genus *Pseudorychodes* Senna, and its facies is very similar to that of some species of the latter, f. i. *Ps. Ritsemae* (Senna) ¹⁾ and *Ps. insignis* (Lewis) ²⁾; the differential characters are: the different shape of the head, which is nearly triangular, with the posterior angles broad, prominent and truncate, and the conformation of the anterior tibiae, these being curved and spinous beneath in the apical third. The thighs are as in *Orychodes* Pascoe, but in this latter the spine of the anterior thighs is not at the middle; the sculpture of the elytra and the shape of the head are also different.

Tmetogonus chiriquensis, n. sp.

Brunneo-aeneus, nitidus, elytris et precipue pedibus rufo-brunneis, illis lineis ferrugineis ornatis; capite subtriangulari, angulis posticis latis, productis, truncatis; supra convexo, fronte sulcata, oculis mediocribus, semiglobosis; rostro basi capitis circiter longitudine illoque angustiore, subquadrangulari, sulcato; parte pone antennis longiore et graciliore, quadrangulari, apice paullo ampliato, supra subplana, marginibus eroso-carinatis, antice scabriuscula; antennarum articulo 2° basi recurvo, 3° praecedentis circiter longitudine, subobconico, 4° vix brevior, sequentibus gradatim longioribus, cylindricis, apicali elongato-acuminato, duobus praecedentibus simul sumptis brevior; prothorace in tertio apicali angustato, deinde rotundato-ampliato, basi transverse bistrigoso, supra convexo, laevi, nitido; elytris dimidio prothoracis longioribus, ejusque latitudine, basi emarginatis, humeris rotundatis leviterque callosis, lateribus usque ad medium subparallelis, deinde attenuatis, ad declivitatem apicalem leviter coarctatis, apici subtruncatis; in dorso sat convexis, juxta suturam striatis, stria 1^a impunctata, 2^a remote punctata, lateribus sulcato-

1) Notes from the Leyden Museum, XIII, p. 161, 1891.

2) Journal of the Linnean Society, XVII, p. 301, tab. XII, fig. 12, 1883.

fortiter punctatis, interstitiis sat convexis, 1° excepto, singulo elytro lineis 5 ferrugineis ornato. — Long. 12 mill.

Hab. Chiriqui.

A single male in my private collection.

The 2nd interstice has a ferruginous line in the basal third and another in the apical third, the 3rd has a line in the middle, the 6th a short line behind the middle, the 7th a line in the basal third. Body beneath red-brown, head and basal portion of the rostrum with two lines of punctures, the median and anterior portion is keeled in the middle; anterior coxae separated, the intercoxal process is broad; metasternum foveolate at the apex, the two basal segments of the abdomen slightly furrowed.

Florence, February 5th, 1895.

NOTE XXV.

ON A COLLECTION OF REPTILES FROM
TRANSVAAL

BY

Dr. Th. W. VAN LIDTH DE JEUDE.

Through the kind offices of my friend Mr. M. Breuning, chief-engineer of the Dutch-South-African Railway-Company, the Leyden Museum was enriched with a small collection of Reptiles. Dr. Helkenberg, who collected these animals at the confluence of the Comati- and the Crocodile-river, about 90 KM. inland of Lorenzo Marques and 200 M. above the level of the sea, and who afterwards presented them to our Museum, has a claim to our gratitude, as 11 species of the 23 collected ones were desiderata to our collections.

In the following list I add an asterisk before the names of the species that were not until now represented in our collections.

Chelonia.

1. *Pelomedusa galeata* Schoepf.

One young specimen.

Lacertilia.

2. *Hemidactylus mabuia* Mor.

One specimen.

- *3. *Pachydactylus Bibronii* Smith.

One specimen.

Notes from the Leyden Museum, Vol. XVI.

*4. *Agama atricollis* Smith.

One young female specimen.

*5. *Zonurus Johnesii* Blgr.

A single male specimen, which differs from Boulenger's description of the type-specimen¹⁾ in having the nasal shield pierced in its posterior part, next to the first labial, the latter being pentagonal and for a small part edging with its upper angle between nasal and frenal shield. The dorsal scales are arranged in 10 longitudinal rows; the lateral shields, which are smaller, rhomboidal and strongly keeled, are arranged in 4 longitudinal rows, not being separated from one another by granules. There are 6 femoral pores in one row, this row being preceded by 3 rows of more or less swollen scales. In all other points our specimen fully agrees with Boulenger's description.

6. *Varanus albigularis* Daud.

Two young specimens, with a dark line running from the eye along the neck untill behind and above the shoulder, where it meets a dark line coming from the throat and running along the side of the neck before the fore leg. In strange contradiction with the name of the species, one of our specimens has a large dark patch on the throat; in the other specimen this patch, though indicated, is not so clearly visible²⁾.

7. *Mabuia quinquetaeniata* Licht.

Six specimens, one of them quite agreeing with Peters' figure of *M. margaritifer* Ptrs.³⁾

*8. *Mabuia varia* Ptrs.

Two specimens.

Ophidia.

*9. *Glauconia Distanti* Blgr.

One specimen, somewhat slenderer than Boulenger's typical

1) Ann. and Mag. of Nat. Hist. 1891, 6th Series, vol. VIII, p. 417.

2) Daudin in his description of the species mentions: „lineis duabus albidis ab oculis supra collum ductis.”

3) W. Peters, Reise nach Mozambique, Amphibien, Pl. X, Fig. 1.

specimen, the diameter of the body 76 times in the total length, length of tail 19 times. Our specimen measures 190 mm.

10. *Pseudaspis cana* L.

One young specimen.

11. *Philothamnus semivariegatus* Smith.

One specimen.

*12. *Prosymna Sundevallii* Smith.

One specimen, with two internasals separated from each other, a single praefrontal in contact with the rostral, one prae- and two post-oculars and seven upperlabials, the third and fourth entering the eye. Temporals $2 + 2$, ventrals 152, subcaudals in 26 pairs. Upper part of the head reddish brown with a yellow spot on a part of the frontal and of the parietals. Back and sides reddish brown with a yellow line along the middle of the back; this line, somewhat broader than one scale, is everywhere interrupted by small brown spots. Underpart whitish, with irregular darker spots, a reddish line running over the middle of the tail.

13. *Dasypeltis scabra* L.

Two specimens, with a dorsal series of large squarish or rhomboidal dark spots, separated by light intervals, alternating with a lateral series of dark spots or crossbars. On some places there is continuity between the dorsal and the lateral spot, so indicating \wedge -shaped dark markings.

14. *Psammophis sibilans* L.

One specimen.

15. *Dryiophis Kirtlandi* Hall.

One specimen, resembling in coloration Günther's figure of *D. Oatesii*¹⁾, but differing from Günther's description in having the rostral reverted to the upper surface of the head, and in having three postoculars²⁾. Another specimen in our Museum, collected in the neighbourhood of the

1) Matabeleland and the Victoria falls. Appendix III, Herpetology, p. 330. London, 1882.

2) After comparing Günther's figure with our Transvaal specimen, I should feel inclined to think that G's *Dryiophis Oatesii* also has three postoculars on its left side.

Cunene-river, shows the same peculiar coloration, viz. the pink T-shaped figure mottled with black on the head and the blackish line from the eye to the penultimate upperlabial. This specimen also has three postoculars. Our Transvaal specimen shows a peculiarity in the form of the supranasals, these shields being so much reverted as to touch the upperlabials; but our specimen from the Cunene-river misses this peculiarity and has quite normally formed supranasals. In the Transvaal specimen there are two frenal-shields on the left, only one on the right side. I think this peculiar form must be regarded as a local Southern variety of *D. Kirtlandi*, as all our specimens from the Gold-coast, as well as those from Liberia, lack this peculiar coloration, and agree with one another in having the upper surface of the head of a uniform greenish colour and in missing the blackish line from the eye to the penultimate upperlabial.

16. *Leptodeira rufescens* Gmelin.

Three specimens.

*17. *Telescopus semiannulatus* Sundeval.

Three specimens.

*18. *Naja nigricollis* Reinhardt.

One single badly preserved specimen.

19. *Causus rhombeatus* Licht.

One young specimen.

Batrachia.

*20. *Cheromantis Petersi* Blgr.

Three specimens, with the outer fingers one third webbed, but without a dark brown stripe on the temporal region.

*21. *Phrynomantis bifasciata* Smith.

One specimen belonging to Boulenger's variety A.

*22. *Breviceps mossambicus* Ptrs.

One specimen.

23. *Bufo regularis* Reuss.

Two specimens.

Leyden Museum, February 1895.

Notes from the Leyden Museum, Vol. XVI.

NOTE XXVI.

ON THE RHINOCEROSSES
FROM THE EAST-INDIAN-ARCHIPELAGO

BY

Dr. F. A. JENTINK.

December 1894.

It seems that the distribution of the *Rhinocerotidae* over the islands of the Malayan Archipelago is still a puzzle to all the authors, unscientific as well as scientific ones, even to the most modern writers on the subject. This fact is the more surprising as fifty years ago the question was *nearly* settled and as since the year 1876 the problem in fact does not exist more at all.

Sal. Müller and Herm. Schlegel said 1839—44 ¹⁾, that in Sumatra was living *Rhinoceros sumatrensis*, and in Java another species *Rhinoceros sondaicus*; the latter *perhaps* also in Borneo. Beautifully executed plates illustrate their accurate and excellent descriptions. The open question thus was this: *does there exist a Rhinoceros in Borneo, and if so, to what species may it belong?*

Jerdon ²⁾ writing in 1874 mentioned *Rhinoceros sondaicus* from Java and Borneo, *Rh. sumatrensis* from Sumatra. He evidently accepted Müller's *hypothesis* as a *fact*.

Prof. Flower ³⁾ recognized in 1876 a young skull of a *Rhinoceros* from Borneo, Labuan, by Mr. Low, as belonging

1) Bijdragen tot de Natuurlijke Historie der Rhinocerossen van den Indischen Archipel; see Verhandelingen over de Natuurlijke Geschiedenis der Nederlandsche overzeesche Bezittingen door C. J. Temminck. Zoologie.

2) The Mammals of India, p. 234.

3) P. Z. S. L. p. 450.

to *Rh. sumatrensis*: of the habitat there was not a shadow of uncertainty as in the case of the other *supposed* Bornean skulls in the same collection, which are *Rh. sondaicus*.

The same author ¹⁾ gave in 1880 an additional incontrovertible proof of the existence of *Rh. sumatrensis* in Borneo; a skull and the skin of the face, with both horns, of an aged individual, collected by Mr. Pryer, Elopura, Bay of Sandakan, North-Eastern-Borneo, belonged after Prof. Flower's examination to *Rh. sumatrensis*.

Mr. Sterndale ²⁾ told in 1884 that, according to a M. S. of Mr. J. Cockburn, *Rh. sondaicus* inhabits Sumatra, Java and Borneo.

In Mr. W. L. Sclater's Catalogue ³⁾, 1891, I see, that according to him *Rh. sondaicus* lives in Sumatra, Java and Borneo, and *Rh. sumatrensis* too in Sumatra, Java and Borneo.

According to Prof. Flower and Lydekker ⁴⁾, 1891, *Rh. sondaicus* lives in Java, Sumatra and probably Borneo, meanwhile *Rh. sumatrensis* is to be found in Sumatra and Borneo.

After Mr. Blanford ⁵⁾ the distribution of the Rhinoceros in the Soenda-islands is as follows: *Rh. sondaicus* in Sumatra, Java and Borneo, *Rh. sumatrensis* in Sumatra and Borneo.

In the same year 1891 ⁶⁾, Mr. Edward Bartlett published his 'Notes on the Bornean Rhinoceros'. He reports that there are four heads and three horns of the Rhinoceros of Borneo in the Museum at Kuching, Sarawak; that the general appearance of this animal (judging from the two heads with skin attached) is simular to that of the Sumatran species (*Rhinoceros sumatrensis*); that the Rhino-

1) P. Z. S. L. p. 69.

2) Mammalia of India and Ceylon.

3) Catalogue of Mammalia in the Indian Museum, Pt. II.

4) An introduction to the study of Mammals.

5) P. Z. S. L. p. 654.

6) The fauna of British India, including Ceylon and Burma, 1888—91 Mammalia, 30 Nov. 1891.

ceros is becoming extremely rare in the Province of Sarawak; that in Central and North Borneo in the old jungle it is more plentiful and that he had *heard* that two species exist, but this, he thinks, is doubtful.

Mr. Everett ¹⁾ remarked in 1893: »the Javan Rhinoceros (*Rh. sondaicus*) has been supposed to exist in Borneo, but my inquiries on the subject have failed to elicit any reliable evidence that this is the case; but the discovery of some subfossil molars in Sarawak, which have been indentified as belonging to this species on good authority, renders it probable that it may yet be discovered in the comparatively unexplored interior''.

If we examine carefully the above cited papers and ask for *facts*, upon which have been based the statements that *Rhinoceros sondaicus* should live in Sumatra and Borneo and that *Rh. sumatrensis* lives in Java, we must confess that there are *no facts at all*.

The material in the Musea teaches that at present we know with absolute certainty that the Rhinoceroses are distributed over the East-Indian-islands as follows: *Rh. sondaicus* over Java and *Rh. sumatrensis* over Sumatra and Borneo.

1) P. Z. S. L. p. 493.

NOTE XXVII.

ON POTAMOGALE VELOX DU CHAILLU

BY

Dr. F. A. JENTINK.

January 1896.

The other day I received among other animals from the Congo a fine skin of the wonderful *Potamogale velox* Du Chaillu.

As to the color of the fur it agrees very well with the descriptions given by Du Chaillu, Barboza du Bocage and Dobson, much less with Allman's.

After Du Chaillu ¹⁾ the type-specimen had »the color above dark, shining brown, lighter on the side, pale yellowish white below, almost pure white on the throat and chin and along the edge of the upper lip”.

Barboza du Bocage's »peau en très-bon état” was colored as follows ²⁾: »le dessus et les côtés de la tête, le dos et les flancs, la moitié supérieure de la première portion de la queue et la portion apicale de cet organe en entier d'un brun foncé, comme chez notre *Loutre vulgaire*. Les lèvres supérieures, le dessous de la tête, le cou, la poitrine, le ventre et la moitié inférieure de la première portion de la queue entièrement blanches. Sur les flancs les poils blancs sont mêlés aux poils bruns, d'où résulte une nuance moins foncée. La face externe des membres est, en partie, brune”.

1) Proc. Bost. Soc. Nat. Hist. Vol. VII, 1861, p. 362.

2) P. Z. S. L. 1865, p. 402, with figures of the skull.

Dobson's ¹⁾ description runs as follows: »the general colour of the fur of the whole upper surface of the head, body and tail, and of the outer sides of the limbs is brown; but the longer hairs which project from the dense under fur show a violet metallic lustre by reflected light; the under surface of the body, from the end of the mandible to the anus, is yellowish white».

Professor Allman's ²⁾ specimen had »the color of the upper side of the head, with the back and the entire tail, and the outer side of the fore and hind limbs dark brown. The whole of the underside of the body, from the extremity of the nose to the vent is brownish yellow».

Now it may be that — Prof. Allman's specimen having been preserved in spirits — it has somewhat lost the beautiful pure white or yellowish white color of the underparts, I however can hardly believe that the color of a bright colored specimen can ever turn into a brownish yellow (see description) or yellow (see plate) as we ought to accept if Allman's specimen has been exactly described and figured after life. There is however another preponderant reason to believe that Allman's *Potamogale* has been very badly described or is not a specimen of *P. velox* at all, and the reason is:

that, according to du Bocage, *P. velox* has 40 teeth, the dental formula after Dobson is i. $\frac{3-3}{3-3}$, c. $\frac{1-1}{1-1}$, pm. $\frac{3-3}{3-3}$, m. $\frac{3-3}{3-3}$ or 40 like du Bocage's statement, but that Allman's specimen had a skull with the dental formula i. $\frac{3-3}{3-3}$, c. $\frac{0-0}{0-0}$, p. $\frac{3-3}{3-3}$, m. $\frac{3-3}{3-3}$ = 36 teeth — and Prof. Allman has very minutely studied the dentition, as the suppressed canine teeth were a puzzle to him (see l. c. p. 6).

1) A monograph of the Insectivora, systematic and anatomical, 1883, Pt. II, p. 98; with plates.

2) Trans. Zool. Soc. Vol. VI, 1869, p. 4; with figures and plates.

I am indebted to Professor Hubrecht for the kindness with which he placed the material from the Utrecht-collection at my disposal for examination. A skin from the Congo without tail and extremities is a good deal larger than a perfectly complete skin with skull from the same locality. Both skins present the underparts of the body colored whitish like Du Chaillu's, Du Bocage's, Dobson's and our specimens; the skull is armed with 40 teeth, so that Allman's specimen again stands isolated.

In conclusion, if Allman's individual has not been decolorized by the action of spirits and has the skull not mutilated, and if Allman's description and figure of the animal are correct, we are obliged to accept that — his specimen may be a *Potamogale* — it very likely cannot belong to *P. velox*, and therefore ought a new specific title: in the latter case I call it *P. Allmani*.

The Utrecht-, as well as the Leyden-specimens, have, like all other specimens of *P. velox*, the hind limbs syndactylous, a very remarkable arrangement, only known — as far as I am aware — to exist in *Hylobates syndactylus* and among Marsupials.

Observation. Dr. Dobson¹⁾ has mentioned and figured the long stiff vibrissae springing from the sides of the muzzle and arising from large hair-follicles, arranged in horizontal rows, which, by their size, cause the peculiar width of the muzzle. I find a pair of such long stiff vibrissae arising from large hair-follicles placed on the chin; these organs are perfectly preserved in our specimen, meanwhile in the mutilated specimen of the Utrecht-collection the vibrissae have been cut off, so that only the large hair-follicles are present, and in the stuffed specimen of that collection, the vibrissae having been removed, there are two openings in the skin.

1) l. c. p. 98, pl. IX, fig. 11.

INDEX.

A.

ablabe (Barbodes) [79](#).
 " (Barbus) [79](#), [96](#).
 " (Puntius) [79](#).
 Acanthopsis [178](#).
 Acanthuridae [18](#).
 Acanthurus [18](#).
 aculeata (Rhynchobdella) [175](#).
 adansonii (Eutropius) [58](#), [59](#).
 adustus (Cerobates) [184](#).
 aeneus (Episphales) [224](#).
 " (Serranus) [1](#), [95](#).
 " (Ubanus) [222](#).
 afer (Notopterus) [83](#), [85](#), [86](#), [96](#).
 affine (Diagramma) [6](#).
 affinis (Helota) [101](#), [103](#).
 africana (Hystrix) [206](#), [207](#).
 africanus (Caranx) [20](#), [95](#).
 Agama [228](#).
 agennes (Lutjanus) [5](#), [95](#).
 agriotides (Megapenthes) [198](#).
 albigularis (Varanus) [228](#).
 Albula [83](#).
 Alestes [63](#), [64](#).
 allardi (Ommatolampus) [172](#).
 allmani (Potamogale) [236](#).
 Allœodromus [179](#), [180](#).
 altipinnis (Eutropius) [57](#), [58](#), [94](#),
 [96](#).
 Ambassis [145](#), [155](#).
 Amblyopus [155](#).
 Amorphocephalus [195](#).
 Anabas [146](#), [147](#), [154](#), [156](#).
 Anguilla [154](#), [156](#).
 angustipennis (Cerobates) [182](#).
 Anoa [204](#).
 Antennarius [23](#), [24](#).
 Aphrodisium [159](#), [160](#), [168](#).

Apocheilichthys [75](#).
 aporos (Eleotris) [152](#).
 Aræorrhinus [187](#).
 Arius [61](#).
 armandvillei (Mus) [206](#), [209](#).
 armatus (Barbus) [177](#).
 Arrhenodes [224](#).
 ashantensis (Mugil) [35](#).
 Astrapia [163](#).
 aterrimus (Microglossus) [166](#).
 Atherura [207](#).
 atricollis (Agama) [228](#).
 attenuata (Helota) [111](#), [112](#).
 aulicum (Lycodon) [127](#).
 auritus (Hemichromis) [49](#), [50](#).

B.

bahamensis (Moniligaster) [138](#).
 Balistes [91](#).
 banana (Gobius) [25](#).
 Barbichthys [178](#).
 Barbodes [79](#).
 Barbus [79](#), [80](#), [177](#).
 barwelli (Moniligaster) [142](#).
 batesi (Pachyteria) [168](#).
 Batrachia [230](#).
 beddardi (Moniligaster) [143](#).
 Belone [73](#).
 bengalensis (Anguilla) [154](#), [156](#).
 bensbachi (Janthothorax) [163](#).
 bibronii (Pachydactylus) [227](#).
 bichir (Polypterus) [92](#).
 bifasciata (Phrynomantis) [230](#).
 bimaculatus (Hemichromis) [49](#), [50](#),
 [95](#).
 biocellatus (Gobius) [151](#).
 Blenniidae [30](#).
 Blennius [30](#).

- borneoensis (Pachyteria) 168.
 bosschae (Zonopterus) 107, 168.
 Bothrops 127.
 boysi (Helota) 111, 114, 116, 118.
 Brachyalestes 64.
 brachyistius (Mormyrus) 68.
 brachyurus (Herpestes) 210.
 braminus (Typhlops) 126.
 brasiliensis (Mugil) 34.
 Brenthidae 179, 213.
 bretaudeaui (Helota) 111, 116, 118.
 Breviceps 230.
 breviceps (Mormyrops) 66, 94, 96.
 bruyni (Craspedophora) 161, 165.
 Brycinus 63.
 Bubalus 199.
 bubalus (Bubalus) 204.
 buehanani (Catla) 45.
 Bufo 230.
 bulumae (Clarias) 55, 95.
 büttikoferi (Chromis) 39, 95.
 " (Chrysichthys) 60, 94, 96.
 büttikoferi (Clarias) 53, 95.
 " (Culius) 27, 95.
 " (Eleotris) 27, 28, 29, 95.
 " (Ophichthys) 88, 94, 96.
 " (Paratilapia) 40, 43, 45, 95.
 büttikoferi (Pelmatochromis) 40, 95.
 " (Polypterus) 92.
 " (Sphagebranchus) 88, 96.
- C.**
- Calodromus 180.
 Campsosternus 197.
 camptacanthus (Barbodes) 80.
 " (Barbus) 79, 80, 96.
 " (Puntius) 80.
 campylacanthus (Antennarius) 23, 95.
 cana (Pseudaspis) 229.
 canina (Genyoroge) 3.
 Caranginae 20.
 carangus (Caranx) 20, 21, 95.
 Caranx 20.
 caretta (Chelonia) 211.
 " (Thalassochelys) 211, 212.
 catebus (Gobius) 151.
 Catla 45.
 Causus 230.
 caxis (Lutjanus) 2, 95.
 celebicus (Gobius) 151.
 cephalus (Mugil) 33, 95.
 Cerberus 126.
 Cerithidea 134.
 Cerobates 182, 184.
 Characinidae 62.
 Chelodina 120.
 Chelonia 211, 227.
 Cheromantis 230.
 chiriquensis (Tmetogonus) 225.
 choerorhynchus (Acanthopsis) 178.
 Chonophorus 25.
 Chromidae 38.
 Chromis 38, 39.
 Chrysichthys 59, 60.
 chrysos (Caranx) 20, 95.
 ciliata (Kuhlia) 149.
 " (Perca) 149, 150.
 " (Percichthys) 149.
 citrina (Nanina) 136.
 Clarias 52, 53, 54, 55.
 Clupea 81.
 Clupeidae 81.
 coeruleus (Moniligaster) 137, 140, 144.
 colubrinus (Ophichthys) 153.
 commersonii (Ambassis) 145, 155.
 " (Antennarius) 23, 95.
 comrii (Manucodia) 162.
 Conger 87.
 consanguineus (Rhaphiodorhynchus) 217, 218, 219.
 Coris 37.
 costata (Terebralia) 133, 134.
 Craspedophora 161, 163, 164, 165.
 crassispinum (Diagramma) 6, 95.
 criniger (Blennius) 30.
 crinitus (Blennius) 30, 95.
 cristatus (Blennius) 30.
 cryptacanthus (Mastacembelus) 32.
 Ctenopoma 37.
 cubera (Lutjanus) 3.
 Culius 27.
 cuneolus (Melanotus) 198.
 curema (Mugil) 34, 95.
 curvipes (Helota) 103.
 euvieri (Ommatolampus) 170, 172.
 cyanurum (Lygosoma) 124.
 Cyclommatus 110.
 Cynoglossus 50.
 Cyphagogus 179.
 Cyprinidae 79.
 Cyprinodontidae 75.
 Cyriodontus 220.
- D.**
- daganensis (Eleotris) 28.
 Dangila 178.

Dasypeltis [229](#).
 deliciosus (Mormyrops) [65](#), [66](#), [96](#).
 Dendrophis [126](#).
 Dentex [13](#).
 depressicornis (Anoa) [204](#).
 desgodinsi (Helota) [111](#).
 deshayesi (Moniligaster) [138](#), [141](#),
 [142](#).
 Desmogaster [139](#), [143](#).
 Diagramma [6](#).
 difficilis (Helota) [104](#).
 diploconoides (Melanotus) [198](#).
 distantii (Glaucania) [228](#).
 dohertyi (Helota) [103](#).
 Draco [122](#).
 Drepane [15](#).
 Dryiophis [229](#).
 dubia (Helota) [101](#), [103](#), [116](#).
 dubia (Sphyræna) [32](#), [95](#).
 Dules [149](#), [150](#).

E.

Echeneis [22](#), [156](#).
 edentulus (Salarias) [155](#).
 Elaphis [126](#).
 electricus (Malapterurus) [62](#), [96](#).
 elegans (Miolispa) [192](#), [193](#), [194](#).
 Eleotris [25](#), [27](#), [152](#)—[155](#).
 elongatus (Anabas) [147](#), [148](#).
 emigrans (Lygosoma) [125](#).
 Ephies [159](#).
 Ephippus [14](#).
 Episphales [222](#), [224](#).
 erythrolamus (Scincus) [124](#).
 erythrurus (Bothrops) [127](#).
 Erythrus [157](#).
 eutactus (Lutjanus) [3](#), [95](#).
 Eutropius [57](#), [59](#).
 exarata (Miolispa) [190](#), [192](#).
 Exocoetus [75](#).
 exportatus (Araeorrhinus) [187](#), [188](#).

F.

fairmairei (Helota) [111](#).
 falcipinnis (Mugil) [35](#), [95](#).
 fasciatus (Hemichromis) [47](#), [95](#).
 fasciculata (Hystrix) [205](#), [206](#), [207](#),
 [208](#).
 fasciculata (Trichys) [205](#), [208](#), [209](#).
 fausti (Miolispa) [188](#).
 feae (Helota) [103](#).
 Fistularia [36](#).
 Fistularidae [36](#).
 flammeus (Campsosternus) [197](#).

florense (Lygosoma) [123](#), [124](#).
 forskälii (Hydrocyon) [62](#), [96](#).
 frenatus (Hemidactylus) [121](#).
 fryi (Helota) [98](#), [101](#), [103](#), [116](#).
 fulvitarsis (Helota) [98](#), [104](#), [111](#).
 fusca (Eleotris) [153](#), [154](#), [155](#).

G.

galeata (Pelomedusa) [227](#).
 Galeoides [16](#).
 Gastrophysus [90](#).
 Gecko [122](#).
 Gehyra [122](#).
 gemmata (Helota) [97](#).
 Genyorange [3](#).
 germari (Ommatolampus) [172](#).
 Gerres [12](#).
 Gerridae [12](#).
 gestroi (Helota) [98](#), [103](#).
 giurus (Gobius) [150](#), [151](#), [173](#).
 Glaucania [228](#).
 glossodonta (Albula) [83](#), [96](#).
 Gobiidae [25](#), [152](#).
 Gobius [25](#), [26](#), [150](#), [173](#).
 goreensis (Ephippus) [14](#), [95](#).
 gramineus (Bothrops) [127](#).
 guineensis (Coris) [37](#), [95](#).
 " (Hemirhombus) [51](#), [52](#),
 [95](#).
 guineensis (Lutjanus) [2](#).
 Güntheri (Trichys) [207](#), [208](#).
 guttifer (Hemiconiatus) [90](#), [96](#).
 " (Tetrodon) [90](#), [96](#).
 guttulatus (Hippocampus) [148](#).
 Gymnodontes [90](#).
 gyrinus (Eleotris) [27](#).

H.

haemorrhoidalis (Ommatolampus)
 [169](#), [172](#).
 Haplochilus [75](#), [76](#).
 hasselti (Campsosternus) [197](#).
 Helota [97](#), [98](#), [101](#), [103](#), [111](#).
 Helotidae [97](#), [111](#).
 Hemichromis [47](#), [49](#).
 Hemiconiatus [90](#).
 Hemidactylus [121](#), [227](#).
 Hemirhamphus [74](#).
 Hemirhombus [51](#), [52](#).
 henryi (Mormyrus) [66](#), [96](#).
 Herpestes [210](#).
 Higonius [185](#).
 Hinulia [125](#).
 Hippocampus [148](#).

histrion (Antennarius) 24, 25.
 hoedtii (Eleotris) 152.
 Homolepida 125.
 houtenii (Moniligaster) 137, 139, 140, 141, 142, 144.
 Hydrocyon 62.
 Hylobates 236.
 Hystrix 205.

I.

immaculata (Helota) 104.
 indicus (Moniligaster) 138, 139, 140, 141, 142, 143.
 infrafasciatus (Haplochilus) 76, 77, 96.
 inquinata (Nanina) 136.
 " (Xesta) 136.
 insignis (Allœodromus) 180.
 " (Cyclommatus) 110.
 " (Pseudorychodes) 225.
 insularis (Trachelizus) 193.
 intercedens (Craspedophora) 164.
 interruptolineatus (Episphales) 224.

J.

Janthothorax 163.
 japonicus (Moniligaster) 141, 143.
 javanicus (Barbus) 177.
 jentinkii (Paratilapia) 43, 45, 94, 95.
 " (Pelmatochromis) 43, 95.
 johnesii (Zonurus) 228.
 jordani (Phymechus) 220.
 jubelini (Pristipoma) 7, 95.

K.

kaupii (Syngnathus) 89, 96.
 kirtlandi (Dryiophis) 229, 230.
 koelreuteri (Periophthalmus) 27, 95.
 kuda (Hippocampus) 148.
 Kuhlia 149.

L.

Labeobarbus 178.
 Labridae 37.
 Labyrinthici 37.
 Lacertilia 227.
 lacordairei (Episphales) 224.
 laevigata (Helota) 98, 111.
 laevigatus (Gastrophysus) 90, 96.
 " (Tetrodon) 90, 96.
 laevis (Amorphocephalus) 196.
 " (Barbichthys) 178.

Lamprothorax 163, 164.
 leerii (Trichopus) 174.
 leptocheilus (Labeobarbus) 178.
 Leptodeira 230.
 lepturus (Trichiurus) 18, 95.
 liberiensis (Barbus) 80.
 " (Clarias) 54, 56, 94, 95.
 " (Eutropius) 59, 96.
 " (Mormyrus) 67, 68, 96.
 ligystropteroides (Ephies) 159.
 linearis (Rhaphidorrhynchus) 216, 217, 218.
 lineata (Echeneis) 156.
 lineatus (Exocoetus) 75, 96.
 lipocheilus (Dangila) 178.
 lipura (Trichys) 207, 208.
 longicollis (Chelodina) 120.
 longimanus (Rhaphidorrhynchus) 214, 215, 222.
 longipes (Helota) 97.
 longipinnis (Alestes) 64, 96.
 " (Brachyalestes) 64, 65.
 longirostris (Araœorruinus) 187.
 Lophorhina 164.
 lugubris (Pachyteria) 168.
 Lutjanus 2, 3, 5.
 Lycodon 127.
 Lygosoma 123, 124, 125.

M.

Mabuia 228.
 mabuia (Hemidactylus) 227.
 macrolepidotus (Alestes) 63, 96.
 " (Brycinus) 63.
 Macrones 176.
 macrophthalmum (Pristipoma) 9, 95.
 macrophthalmus (Pristipoma) 9.
 macrops (Chrysichthys) 60.
 " (Conger) 87, 96.
 macroura (Hystrix) 205, 206, 207, 208.
 maculatus (Balistes) 91, 96.
 " (Dules) 149.
 maderensis (Clupea) 81, 83.
 magnifica (Craspedophora) 162, 163.
 magnificus (Zonopterus) 107.
 Malapterurus 62.
 mandibularis (Eutropius) 57, 58, 96.
 mantoui (Craspedophora) 165.
 Manucodia 162.
 marcheii (Mastacembelus) 31, 32, 95.
 margarita (Trygon) 91, 96.
 margaritifera (Mabuia) 228.
 marginatus (Dules) 149.

marmoratus (Antennarius) 23, 95.
 maroccanus (Dentex) 13, 95.
 Mastacembelidae 31.
 Mastacembelus 31, 176.
 Megapenthes 197.
 melanopogon (Lygosoma) 123, 124.
 " (Scincus) 123, 124.
 melanopterus (Gerres) 12, 13, 95.
 melanospilos (Hippocampus) 148.
 Melanotus 198.
 melanurus (Smaris) 11, 95.
 mellii (Helota) 97, 98, 104, 106.
 mento (Mormyrus) 72, 96.
 mexicanus (Rhaphidorrhynchus)
 216, 217, 218, 219.
 meyeri (Lygosoma) 123, 124.
 micracanthus (Macrones) 176, 177.
 microcephalus (Anabas) 147.
 " (Mormyrus) 68.
 " (Osteochilus) 177.
 Microglossus 166.
 mindorensis (Bubalus) 199, 200, 204.
 Miolisa 188, 190, 192, 193, 194.
 Moniligaster 137, 143, 144.
 Moniligastridae 137.
 monroviae (Acanthurus) 18, 95.
 Mormyridae 65.
 Mormyrops 65, 66.
 Mormyrus 66, 67, 69, 71, 72.
 Moronopsis 149.
 mossambicus (Breviceps) 230.
 " (Chromis) 38, 40, 95.
 Mugil 33, 34, 35.
 Mugilidae 33.
 Muraenidae 87.
 Mus 206.
 mutilata (Gehyra) 122.

N.

naevius (Scincus) 124.
 Naja 230.
 Nanina 136.
 nasus (Orthragoriscus) 129.
 natunensis (Megapenthes) 197.
 naucrates (Echeneis) 22, 95.
 Neolebias 78.
 niger (Seleucides) 162.
 nigri (Gerres) 13.
 " (Gobius) 26.
 " (Notopterus) 85, 86, 96.
 " (Xenomystus) 85.
 nigricollis (Naja) 230.
 nigrodigitatus (Chrysichthys) 59, 96.
 nigrolimbatus (Ommatolampus) 169,
 172.

nili (Notopterus) 85, 86.
 " (Xenomystus) 85.
 niloticus (Chromis) 38, 95.
 notata (Helota) 98, 103, 114.
 Notopteridae 83.
 Notopterus 83, 85.
 Novacula 131.
 novae-guineae (Chelodina) 120.

O.

oatesii (Dryiophis) 229.
 oberthüri (Helota) 97.
 obscurus (Ophiocephalus) 36, 95.
 octactis (Gerres) 13.
 odoë (Sarcodaces) 63, 96.
 oligolepis (Anabas) 147, 148.
 Ommatolampus 169, 171.
 oortii (Salaria) 155.
 Ophichthys 88, 153.
 Ophidia 228.
 Ophiocara 152.
 Ophiocephalidae 36.
 Ophiocephalus 36, 174.
 ophiocephalus (Eleotris) 152.
 Orthragoriscus 128.
 Orychodes 220, 225.
 Osphronemus 173.
 Osteochilus 177.
 Otolithus 17.
 ovatus (Trachynotus) 21, 95.

P.

Pachydaetylus 227.
 Pachyteria 168.
 palliatus (Ephies) 159.
 palmas (Polypterus) 92, 96.
 panamensis (Rhaphidorrhynchus)
 217, 218, 219.
 papilio (Periophthalmus) 27, 95.
 Paradules 149, 150.
 Paratilapia 40, 43.
 parkii (Arius) 61, 96.
 Parotia 163.
 pasteuri (Pachyteria) 168.
 Pediculati 23.
 Pelamys 212.
 Pellonula 83.
 Pelmatochromis 40, 43, 46.
 Pelomedusa 227.
 Perca 149.
 Pereichthys 149.
 Percidae 1.
 Periophthalmus 27.
 petersi (Cheromantis) 230.

petherici (Ctenopoma) 37, 95.
 Petrocephalus 71.
 Philothamnus 229.
 phlebotomus (Acanthurus) 18.
 Phrynomantis 230.
 Phymechus 213, 219, 222.
 pictus (Dendrophis) 126.
 " (Episphales) 224.
 " (Ommatolampus) 172.
 pisonis (Culius) 27, 95.
 " (Eleotris) 27, 28, 94, 95.
 planiceps (Ophiocephalus) 175.
 platyurus (Hemidactylus) 121.
 Pleuronectidae 50.
 plutus (Campsosternus) 197.
 Poecilia 75.
 politus (Rhaphidorrhynchus) 216.
 polleni (Paratilapia) 45.
 polydactylus (Galeoides) 16, 95.
 Polynemidae 16.
 Polypteridae 92.
 Polypterus 92.
 polytaenia (Hippocampus) 148.
 porocephala (Eleotris) 152.
 Potamides 133.
 Potamogale 234, 235, 236.
 poweri (Higoniis) 186.
 Pristipoma 7, 8, 9.
 Prosymna 229.
 Psammodynastes 127.
 Psammophis 229.
 Psettidae 19.
 Psettus 19.
 Pseudaspis 229.
 Pseudorychodes 224, 225.
 pulverulentus (Psammodynastes) 127.
 punctata (Drepane) 15, 95.
 Puntius 79.
 pustulata (Helota) 118.

Q.

quinquetaeniata (Mabuia) 228.

R.

redemanni (Zonopterus) 168.
 regularis (Bufo) 230.
 Rhaphidorrhynchus 213—219, 222.
 Rhinoceros 231.
 Rhinocerotidae 231.
 rhombeatus (Causus) 230.
 Rhynchobdella 175.
 rhynchops (Cerberus) 126.
 ritsemæ (Pseudorychodes) 225.

rothschildi (Erythrus) 157.
 " (Rhaphidorrhynchus) 214.
 rotundata (Helota) 98, 101, 103, 112.
 rufescens (Leptodeira) 230.
 rufovittatus (Trachelizus) 193.
 rupestris (Dules) 149.

S.

salae (Clarias) 52, 95.
 Salariae 30, 155.
 saleyeri (Megapenthes) 198.
 samaoensis (Draco) 122.
 Sarcodaces 63.
 sarda (Pelamys) 212.
 sauvagii (Mormyrus) 69, 70, 71.
 scabra (Dasypeltis) 229.
 scandens (Anabas) 146, 147, 148, 154, 156.
 schlegelii (Hemirhamphus) 74, 96.
 Sciaenidae 17.
 Scincus 123.
 Sclerodermi 91.
 Scombresocidae 73.
 Scombridae 20.
 Scombrinae 22.
 sebae (Psettus) 19, 95.
 Seleucides 162.
 semiannulatus (Telescopus) 230.
 semicinctus (Ophichthys) 88, 96.
 semitorquatus (Herpestes) 210.
 semivariegatus (Philothamnus) 229.
 senegalensis (Belone) 73, 96.
 " (Clupea) 81, 83, 96.
 " (Cynoglossus) 50, 95.
 " (Eleotris) 28.
 " (Otolithus) 17, 95.
 senegalus (Polypterus) 92.
 Serranus 1.
 serratipennis (Helota) 103.
 severini (Helota) 111.
 sexsulcatus (Cerobates) 185.
 sexvittatus (Rhaphidorrhynchus) 213.
 sibilans (Psammophis) 229.
 Siluridae 52.
 sinensis (Helota) 99, 105.
 singularis (Taphrocomister) 185.
 smaragdinum (Lygosoma) 124.
 Smaris 11.
 sondaicus (Rhinoceros) 231, 232, 233.
 soporator (Gobius) 26, 95.
 Sparidae 13.

spectabilis (Gobius) [150](#).
 Sphagebranchus [88](#).
 Sphyraena [32](#).
 Sphyraenidae [32](#).
 spilauchen (Haplochilus) [75](#), [96](#).
 spilauchena (Poecilia) [75](#).
 Squamipinnes [14](#).
 squamosus (Cyclommatus) [110](#).
 stampflii (Hemirhombus) [52](#), [94](#), [95](#).
 stigma (Ommatolampus) [171](#).
 stockumii (Novacula) [131](#), [132](#).
 striatus (Ophiocephalus) [174](#), [175](#).
 subradiatus (Elaphis) [126](#).
 suillum (Pristipoma) [8](#), [95](#).
 sulcatus (Potamides) [134](#), [135](#).
 sumatrana (Miolispa) [190](#).
 sumatranus (*Amorphocephalus*) [195](#).
 sumatrensis (*Rhinoceros*) [231](#), [232](#),
[233](#).
 sundevallii (Prosymna) [229](#).
 syndactylus (Hylobates) [236](#).
 Syngnathidae [89](#).
 Syngnathus [89](#).

T.

tabaccaria (Fistularia) [36](#), [95](#).
 Tajasica [25](#).
 tajasica (Chonophorus) [25](#), [95](#).
 " (Gobius) [25](#), [26](#), [95](#).
 Tanysiptera [165](#).
 Taphrocomister [185](#).
 taprobanense (Lygosoma) [125](#).
 Telescopus [230](#).
 tenerrima (Terebralia) [133](#).
 tenerrimus (Potamides) [133](#), [134](#).
 tenkatei (Cerithidea) [134](#).
 " (Hemidactylus) [121](#).
 tenue (Lygosoma) [125](#).
 tenuicauda (Mormyrus) [69](#), [71](#), [94](#),
[96](#).
 tenuicauda (Petrocephalus) [71](#).
 Terebralia [133](#), [134](#).
 tetraspilatus (Ommatolampus) [169](#),
[170](#), [171](#), [172](#).
 Tetrodon [90](#).
 Thalassochelys [211](#).
 thibetana (Helota) [97](#), [98](#), [99](#), [104](#),
[106](#).
 tibiale (Aphrodisium) [159](#), [168](#).
 tibialis (Helota) [98](#).
 tigris (Antennarius) [24](#).
 timorensis (Draco) [122](#).
 " (Varanus) [123](#).
 Tmetogonus [213](#), [224](#), [225](#).

trachelizoides (Miolispa) [193](#).
 Trachelizus [193](#), [194](#).
 Trachynotus [21](#).
 Trichiuridae [18](#).
 Trichiurus [18](#).
 trichopterus (Osphronemus) [173](#).
 Trichopus [174](#).
 Trichys [205](#), [207](#), [208](#).
 trimaculatus (Barbus) [80](#).
 trispilus (Barbus) [80](#).
 tristriatus (Cerobates) [183](#).
 Trygon [91](#).
 Trygonidae [91](#).
 Typhlops [126](#).
 typus (Apocheilichthys) [75](#).

U.

Ubanus [213](#), [221](#), [222](#).
 unicolor (Gobius) [152](#).
 " (Mastacembelus) [176](#).
 unifasciatus (Neolebias) [78](#), [94](#), [96](#).
 usheri (Mormyrus) [71](#), [96](#).

V.

Varanus [123](#), [228](#).
 varia (Mabuia) [228](#).
 variabilis (Rhaphidorrhynchus) [216](#).
 variegatum (Lygosoma) [123](#), [124](#).
 velox (Potamogale) [234](#), [235](#), [236](#).
 ventralis (Helota) [103](#).
 verrucosa (Helota) [98](#), [103](#).
 verticillatus (Gecko) [122](#).
 vicinus (Rhaphidorrhynchus) [214](#).
 vigorsii (Helota) [97](#).
 viridis (Draco) [122](#).
 vomerinus (Salaris) [30](#), [95](#).
 vorax (Pellonula) [83](#), [96](#).

W.

wilhelminae (Lamprothorax) [163](#),
[164](#).

X.

Xenomystus [85](#).
 Xesta [136](#).

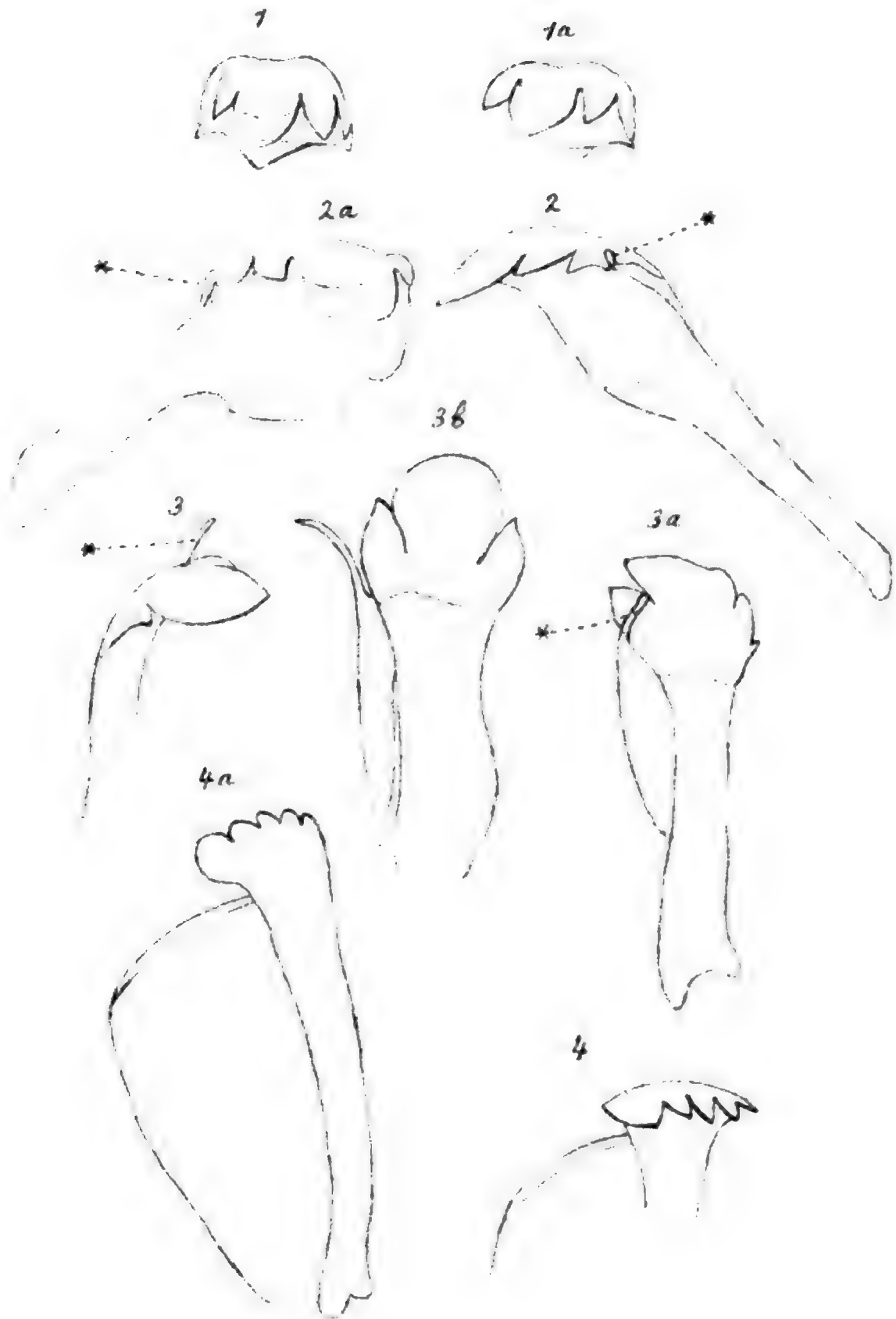
Z.

Zonopterus [107](#), [168](#).
 Zonurus [228](#).



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Plate 6.



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